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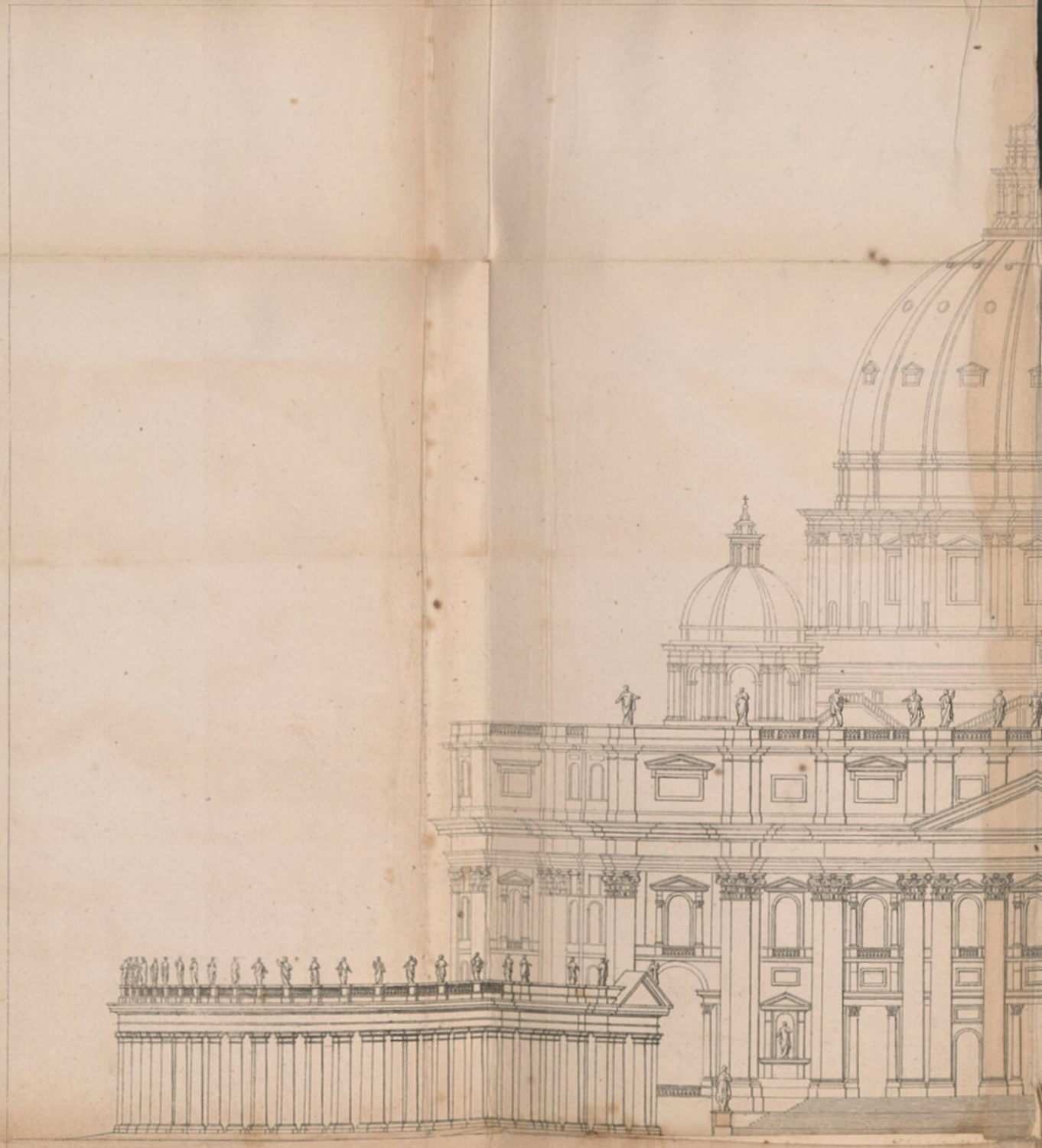

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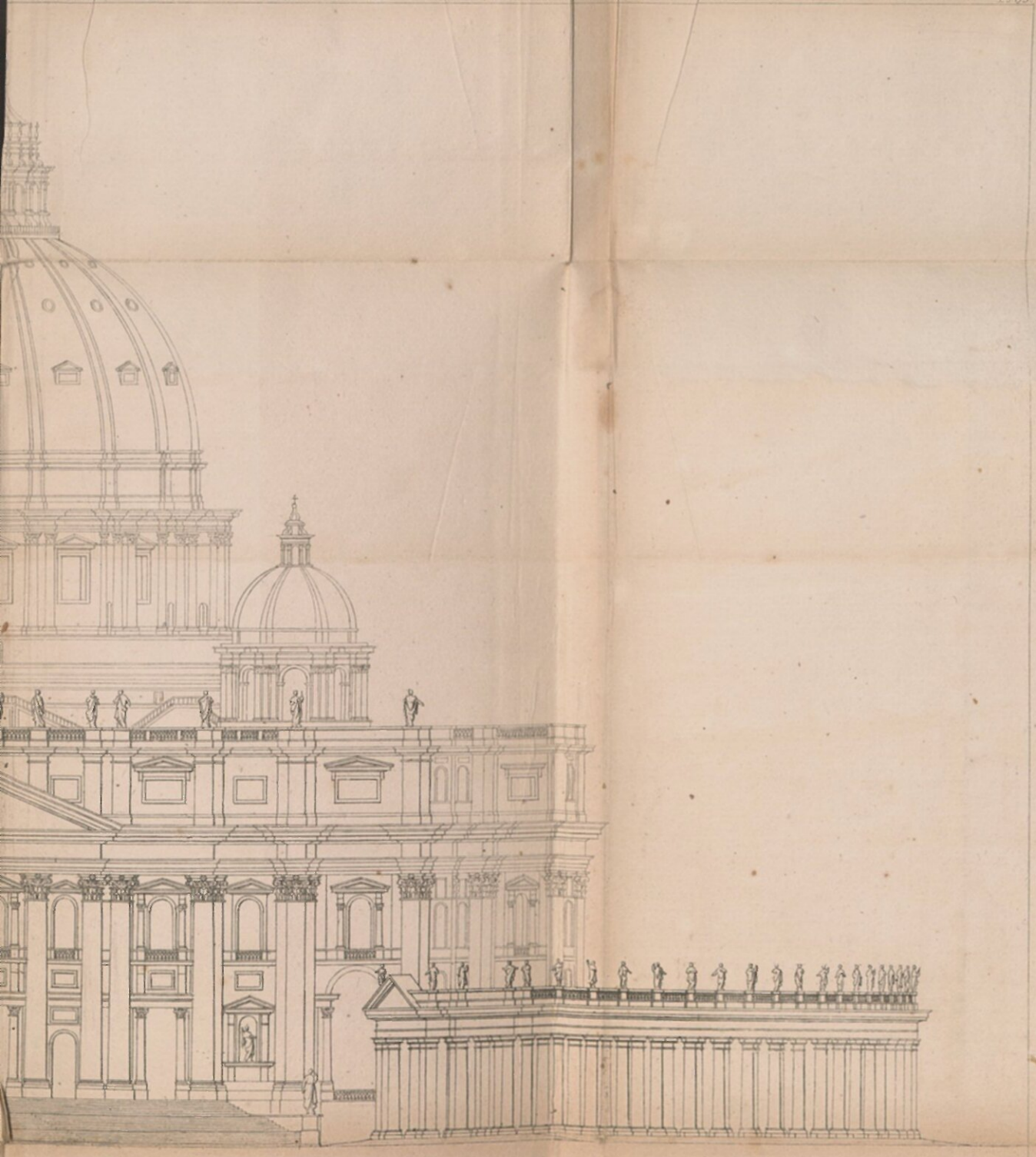

J. Fothergill Sc.

CHURCH OF S[T] PETERS AT ROME.

THE

ARCHITECTURAL DIRECTOR:

BEING

AN APPROVED GUIDE

TO

ARCHITECTS, DRAUGHTSMEN, STUDENTS, AMATEURS, AND BUILDERS,

IN THE

STUDY, EMPLOYMENT, AND EXECUTION OF

ARCHITECTURE.

CONTAINING

COMPREHENSIVE COMPARATIVE TABLES

Of the respective Proportions of each Member of the Orders of Antiquity, and those of the Modern Masters;

AND

DETAILED TABLES,

Presenting the Dimensions of every Moulding in the Orders of Vignola.

TOGETHER WITH

PLATES SHOWING THE PARTICULAR FORM OF EACH DISTINCT PART,

AND THE DIFFERENT METHODS OF TRACING THEM;

WITH ARCADES

Adapted to the several Orders, when employed either with or without Pedestals;

AND ALSO

THE PUREST EXAMPLES

OF ALL THE OTHER PARTS WHICH ENTER INTO THE COMPOSITION OF EDIFICES.

The whole reduced to Modules and Minutes, or Parts.

TO WHICH ARE ADDED,

A History of the Art from its origin.

A description of, and observations on, the most celebrated Antique and Modern Edifices.

A developement of the essence of the Art, embracing the ideas of order, symmetry, variety, harmony, unity, beauty, invention, &c., and

A minute examination of the particular qualities and suitable employment of the constituent parts of Edifices.

BY JOHN BILLINGTON,

OF THE ROYAL ACADEMY OF ARCHITECTURE AT PARIS.

EXTENSIVELY ILLUSTRATED BY PLATES AND TABLES.

London:

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BOSTON ARCHITECTURAL CLUB L

TO HIS GRACE

THE DUKE OF NORFOLK,

EARL OF ARUNDEL, SURREY, AND NORFOLK,

BARON HOWARD,

&c. &c. &c.

AND HEREDITARY EARL MARSHAL OF ENGLAND.

My Lord Duke,

The honour of dedicating a Work of Art to those who are as much respected for their virtues and their knowledge, as they are honoured for their rank and their titles, is at all times great; and its value is uniformly acknowledged, even by Authors whose merits the public have long admitted, and the success of whose Works seems no longer to be entirely dependant on the fostering patronage of rank.—How much more valuable, then, must that honour be to him who is treading for the first time the difficult path of Architectural Literature, and with whose name the public is entirely unacquainted. Such, my Lord Duke, is my case; and it is with sentiments of heart-felt gratitude and profound respect that the following pages are, by permission, Dedicated to your Grace, by

Your Grace's most Grateful

And most Obedient Servant,

JOHN BILLINGTON.

PREFACE.

A WORK on Architecture, embracing that extent of information which the subject requires, and which, whilst supplying the place of a great number of books, that treat only on distinct parts of the subject, should present a clear and perspicuous detail of the Theory of the Art, has long been a desideratum, in this country, both to artists and the general reader. If proof be asked for, it will be found in the manifest imperfections, and the gross inconsistencies, which are but too often seen in the plans and elevations of many of our public buildings, as well as in the residences of private gentlemen. Nor can the blame be entirely attributed to the want of adequate knowledge and skill in the architect, who is sometimes obliged to alter his designs, in order to suit the unfortunate caprices and whims of his employers. It has been somewhere remarked, that as wealth bequeaths to its possessor the power of gratifying his wishes, so also it sometimes becomes the unwitting spoliator of an assumed character of taste

and judgment. The errors which a private gentleman may make, in the choice of a plan or elevation for that which is to become the future residence of his family, are, however, of a very venial kind, since a knowledge of the theory and beauties of Architecture has hitherto formed no part of general public education; and the national taste, in that particular, has consequently remained almost entirely uncultivated. But the errors which may be committed by those with whom it rests to decide on such designs as are presented for public edifices are of a more important nature. Indeed it is much to be feared, that, notwithstanding the high and just pretensions which this country makes to a knowledge of the arts and sciences, too many of our public, as well as of our private buildings, exhibit but too plainly our deficiency of knowledge and correct taste on the subject of Architecture. On the importance of this general knowledge, in a national point of view, it is unnecessary to make any remark. The works which have lately been published upon this subject, with a view, as may be presumed, from their price, to inform the public, leave the reader almost as ignorant as they found him, on all parts of this inestimable art, except the simple measurements and proportions of the five orders. If he would obtain a more accurate and extensive knowledge of the subject, he must purchase a number of works, many of which are published at a price often totally

beyond his means. One advantage, however, is gained by this system, it confines the knowledge of this art within the limits of a comparatively few minds, some of whom reap an undeserving profit thereby, at the expense of the public. To remedy this defect, as far as possible, is the object of the present work, which is intended to supersede the necessity of that multiplicity of publications, the expence of which has too long been an insuperable barrier to the attainment of a necessary knowledge of the art by those connected with it,—too long prevented the public generally from acquiring information which ought to form a part of the education of every gentleman. A knowledge of the theory and beauties of Architecture concerns, indeed, almost all classes of readers, since it is only by the possession of this knowledge that the public is enabled to appreciate the relative merits of architectural productions.

In order to give an increased interest to this work, and to facilitate the attainment of a correct architectural taste, a comprehensive History of the Art, from its origin to the present time, is given, containing an ample description of the most celebrated antique and modern edifices, a comparison of the styles of the different artists who executed them, and a brief notice of their principal beauties and defects. On the value of this part of the subject to the general reader, as

well as to the artist, it is needless to comment. It furnishes to both a body of useful and interesting information, which is rendered still more complete by the Comparative Tables that accompany the detailed explanations of the five orders, in which will be found a comparison of the general proportions, according to which the different parts of each of the orders were executed, in the most celebrated edifices of antiquity, by the most esteemed artists of that period. To these are added the proportions assigned by the most eminent of modern masters. Each of the constituent parts of edifices, together with the articles Distribution and Decoration, &c. are treated of at considerable length, as forming a very important part of architectural study; and the sources from whence the art derives its means of expressing character, &c. are fully developed, and are offered to the notice of the student as worthy his most serious attention.

The principles on which the theoretic part of this work is founded are those which have been acknowledged by the most celebrated of the modern masters, and which are manifest in the execution of the most esteemed productions of the ancients. In the illustration of this part of the subject, the examples furnished by Italy have been preferred, as exhibiting a greater degree of perfection than those of any other country, being the works of men who obtained their knowledge, and consequent

reputations, from a most careful study of the remains of antiquity, and who executed their various productions almost in their immediate presence. Hence no study can be more profitable than that which is afforded by these justly esteemed examples, of which only such parts are given as are the most deserving of attention. It must not be understood, however, that these examples are given as copies for servile imitation; neither must it be forgotten that our climate, materials, and customs, sometimes prescribe other forms than those which they exhibit. They are offered as presenting some of the best examples of their kind; and which it is impossible to study without deriving therefrom considerable profit. The liberty has been taken of divesting them of any thing, either in their form, distribution, proportion, or decoration, that might be considered as injurious to their good effect. It is therefore hoped that their reproduction, with these modifications, will be found eminently useful, not only in determining their real merit, but also as they may be offered with confidence, both to the student and artist, as the purest and most correct models for imitation.

Construction forms no part of the body of this work; but the necessary information will be found in the Dictionary attached to it. Landscape gardening, however, as connected with Architecture,

is not omitted, but will be found treated on in its proper place.

The style in which this work is written has not occupied so much of the author's attention as the matter. If, therefore, that style should not in all cases be approved, he will neither be surprised nor disappointed. His object has been to communicate information; in endeavouring to do which he has availed himself of the labours of the most eminent authors that have preceded him. Those to whom he has been principally indebted are, Vitruvius, Vignola, Milizia, Viel, Legrand, Blondel, and likewise the different invaluable productions of Messrs. Quatremere, Percier, Normand, and Durand. He has endeavoured to simplify and condense the opinions of these able men in uniting them with his own, and he takes this public opportunity of acknowledging the same. Should his labours be found to conduce to the advancement of Architectural knowledge in this country, his desires will be realized, and his labours repaid by the gratifying consciousness of their utility.

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THE

ARCHITECTURAL DIRECTOR;

OR,

POCKET VIGNOLA.

WHAT ARCHITECTURE IS; AND THE KNOWLEDGE REQUISITE TO AN ARCHITECT.

ARCHITECTURE is generally defined to be the art of building; but this definition does not carry with it a sufficiently positive and extended meaning. If the art of building is considered relative to architecture, it is nothing more than construction; if it is considered relative to our wants, it appertains to all ages and to all countries: but the art of architecture, according to the etymology of the Greek words *αρχη τεκτονια*, far from being common to all nations and to all ages, is reserved but to a few centuries and privileged countries, and ought to be defined the art

of building according to certain rules and proportions determined by nature and judgment. The art of building is found amongst savage nations; but the art of architecture can only be the fruit of society enlightened by civilization and the other arts.

Architecture is an art that requires great judgment and diversity of studies to enable a person to form correct opinions of the works of others appertaining to it. It is acquired by theory and practice.

The theory of architecture is the knowledge of it acquired by the study of the remains of antiquity, the writings of the most learned authors, by travels, and by meditation. The practice is the knowledge which is gained by executing and conducting buildings.

The etymology of the word architect indicates that the person thus designated is the inspector and chief of those employed in the erection and completion of edifices, and that he has the general direction of the works and of their execution; which supposes a union of rare qualities and very extended knowledge. The knowledge Vitruvius required of an architect shows the idea the ancients formed of architecture, and the degree of esteem to which those might aspire who professed the art. It will perhaps create great astonishment to learn that Pythius, one of the most

famous architects of antiquity, who rendered himself illustrious by the construction of a temple to Minerva at Priene, in his Treatise on Architecture, required of an architect a more profound knowledge of each particular science, than what was necessary to a man who exercised only one science. But Vitruvius, more judicious, required only a medium knowledge of the sciences he enumerates. According to him, it is neither possible nor necessary that he should be so good a grammarian as Aristarchus, so great a musician as Aristoxenus, so excellent a painter as Apelles, so good a sculptor as Myron or Polycletus, nor so great a physician as Hippocrates: "it is sufficient," says he, "that he be not ignorant of grammar, music, painting, sculpture, and physic; the mind of one man alone not being capable of attaining perfection in such varied and excellent knowledge." To these acquirements Vitruvius requires that an architect join great study and perfect disinterestedness. "I well know," says he, "that a great part of the world esteems the principal wisdom to be that which makes us capable of amassing great riches, and that there are men who have been so fortunate as to acquire wealth and reputation together. But the greater part employ all their diligence in intriguing to obtain lucrative engagements. As for myself, I learnt from my masters, that it was necessary for

an architect to wait until entreated to undertake the conducting of a work; and that he could not, without blushing, solicit that which makes him appear self-interested; since we know that men do not follow others to confer benefits, but to receive benefit from them. Indeed, what ought the person to think who is entreated to give his wealth, to be employed at a great expense, but that he who asks expects to make a great profit, to the prejudice of the person whom he solicits. This is the reason why formerly it was customary, before employing an architect, to get information as to his character and education; and he whose conduct was marked by a degree of modesty was trusted in preference to him who affected to appear exceedingly capable. It also was the custom of this time, that the architects instructed only their children or relations, or those they considered capable of acquiring the extensive knowledge requisite in an architect, and for whose integrity they could answer."

From what has just been stated, it may be seen how highly architecture, and those who professed it, were esteemed by the ancients. One beautiful edifice alone established the fame of a city, and the reputation of the architect. Athens prided itself as much in its edifices as in the victories of Platæa and Marathon: it gloried above all in its citadel, the expense of which

corresponded with the beauty of the work. Nothing can give us a higher idea of the esteem enjoyed by the architects of antiquity than the letter of the Emperor Theodosius to Symmachus, which is here given as Cassiodorus has transmitted it to us.

"The dispositions of our palace are so well ordered, that our learned artists cannot pay too much attention to conserve it, since the admirable beauty of this *chef d'œuvre*, if not kept in repair, in the end would be destroyed by the lapse of time. These excellent constructions make my delights; they are the noble image of the power of the empire; and they attest the greatness and glory of kingdoms. The palace of the monarch is represented to the ambassadors as an edifice worthy of their admiration; and, at first sight, the master appears to them such as his habitation seems to announce. It is then a great pleasure to a prince, who is a connoisseur, to inhabit a palace which unites all the perfections of the art, and there refresh his mind from the occupation of public affairs, by the charm which the marvels of his edifices procure him. It is said that the Cyclops were the first who built in Sicily edifices as spacious as the caverns which they had abandoned, after Ulysses had deprived the unfortunate Polyphemus of his sight. It was from thence that the art of constructing past into Italy, and posterity, rivals of these first architects, profited from

their inventions, and employed them for their necessities and comforts.

"From this we notify, that your intelligence and talents have determined us to confide to you the care of our palace. Our desire is, that you be attentive to preserve in its ancient splendour all that is antique, and that what you add be constructed in the same taste: for, as a beautiful form ought to be clothed with a uniform colour, in like manner it is befitting that the same beauty and the same taste reign in all the members and parts of our palace. By often reading Euclid, and imprinting on your mind the astonishing variety of figures with which he has enriched his books of geometry, you will be rendered capable of accomplishing our intentions, and be in immediate possession of matter to answer our requests. Have also always in view the profound lessons of Archimedes and Metrobes, in order to enable you to produce new *chefs-d'œuvres*. This is not an employment of little consequence which is confided to you, since it obliges you to accomplish, by the ministry of your art, the ardent desire we have to illustrate our reign by new edifices. For, whether we wish to repair a city, build fortresses, or yield to the flattering pleasure of erecting a prætorium, you will be obliged to execute and give a sensible existence to the objects on which we may determine. What employment more honourable, what

function more glorious, than this which places you within the reach of transmitting to the most distant ages edifices which will ensure you the admiration of posterity! For you are required to direct the mason, sculptor of marble, founder of bronze, workmen in stucco and plaster, and painter in Mosaic. You are bound to learn them that of which they are ignorant, and to resolve the difficulties which this army of men who work under your guidance propose to you, and who are to have recourse to your enlightened judgment. Behold then how much knowledge he ought to have who has so many to instruct. But you will also gather the fruits of their labours; and the success of their works, which you shall have well conducted, will make your eulogy, and will become your most flattering recompense. For this reason we wish whatever you may be charged to build, that it be done with so much intelligence and solidity, that the new erections may only differ from the ancient in the freshness of their date. That will be possible to you, if a base cupidity never incline you to deprive the workmen of a part of our bounty. It is easy to make yourself obeyed, if they receive a honest and competent salary, without fraud or reserve. A generous hand animates the genius of the arts; and all the ardour of the artist is directed to his work, when he is not distracted by care for a subsistence. Further consider what the distinc-

tions are with which you are decorated: you walk immediately before our person, in the midst of a numerous retinue, having the golden rod in hand, a prerogative which, by your approaching so near to us, announces that it is to you that we have confided the execution of our palace."

From the extensive knowledge which architecture required of the ancients, we shall not be astonished that Plato avowed a good architect to be a rarity in Greece. But another reflection presents itself: in making a comparison of the studies of those times with the method used at the present day to learn architecture, it seems we ought to conclude, either that the art has lost many of the difficulties it formerly had, or that the greater part of those who profess it are inferior to that which it requires. However, if we except astronomy and music, the study of which is less necessary to modern architects than it was to those of antiquity, in constructing theatres and solar dials, but of which a slight knowledge is very advantageous, it may easily be discovered that the art of architecture cannot dispense with the other subjects which were required of the ancients; and further, that modern wants and other circumstances have augmented the extent of knowledge necessary to form a good architect.

Literary knowledge and history are much more useful to a modern than they were to an ancient

architect. Vitruvius required that an architect should be able to give a reason for every thing in architecture that has relation to history, and of explaining the origin of caryatides and other similar things. How much more indispensable then are these studies at the present day, since by the adoption we have made, or rather ought to make, of the antique architecture, an architect finds himself perpetually necessitated to employ an infinity of parts or ornaments, the common and parasite use of which can only become ridiculous, if not directed by a judicious and enlightened mind, that knows the origin of what is employed, and how to make a choice appropriate to the particular character of each edifice. The science of history, as it embraces the history of architecture, discloses the revolutions of an art which, more than any other, is linked to the destiny of the nations that employ it. In following its origin, progress, and decadency, the student will distinguish the changes of taste, and varieties of style, adopted in different ages by different nations; he will habituate himself to the discernment which the monuments of antiquity require, and the studies he ought to make from them.

Drawing ought to form the basis of a course of studies; and some authors have insisted that no one can become a good architect without having a perfect knowledge of painting or sculpture. It is

astonishing to contemplate the great number of celebrated architects who, to a proficiency in architure, united a superiority in other arts, of which it is rare at the present day to attain a knowledge of one alone. But without going so far back as to the Greeks and Romans, do we not find this union of superior talents in individuals in the flourishing centuries of Italy? Do not all the arts related to drawing dispute the right to the renowned names that Fame has inscribed on the records of each? To make the enumeration would be almost to except none of them. It was as rare at that time to profess but one art, as it is in our days to possess more than one. It would form too long a list to mention all the celebrated painters and sculptors who also possessed, to a very high degree, a knowledge and taste in architecture, and who have left posterity in doubt under which of the arts their names ought to be inscribed. Amongst them we read the names of Giotto, Orcagna, Mantegna, Michel Angelo, Raffaello, Giulio Romano, Polidoro, Vasari, Volterra, Pellegrini Tibaldi, Cigoli, Giovanni Bolognese, Domenichino, Cortona, Algardi, Bernini, and Carlo Maratti. Opposite to this list may be placed the great masters of architecture, who, to a knowledge of that art, united, in a more or less eminent degree, a practical knowledge of the other arts related to drawing; at the head of which stand Brunneleschi and Amma-

nati, two chiefs of the Florentine school, who left more than one monument of their knowledge of sculpture; Sansovino, Palladio, and San-Gallo, who were equally able sculptors; Bramante, Vignola, Alberti, Boromini, and many others, who exercised in turn the pencil and compasses. It may be proved that there exists scarcely any beautiful monument of architecture, which is not the fruit of a combined knowledge of the arts in those who were the authors.

The reason of this union of talent in several arts, formerly so common, but at the present day so rare in one man alone, was, that in former times, one spirit presided over the arts,—one chain alone connected them,—and this common bond was drawing, or a practical knowledge of natural proportions, which forms the base of architecture, sculpture, and painting. By consulting the memoirs of the lives of the celebrated artists of those primitive times of the arts, the truth of what is here advanced will be discovered; namely, that their early education was the same, and that the most able architects formed themselves in the school of the most famous painters. Modern institutions, in extending and rendering the mechanism of each art more difficult, and in contracting genius within a limited circle, have not broken this fraternity, though at the present day it has no more than a name, and no longer exists but in the writings of

those who treat on the arts. The arts at that time were really fraternal, and the artists formed a family that enjoyed and enriched themselves from a common patrimony. Instructed in the principles of all the arts, they passed indifferently from one to the other, or confined themselves to that with which their taste or circumstances rendered them the most familiar, but always conserving the analogies which their first studies had taught them. It often happened that chance alone caused them to exercise an art in which they had not until then had any practice, and suddenly developed a talent, the acquisition of which at the present day seems to require the whole life of a man.

"The cause of the facility painters and sculptors have in learning architecture," says Vasari, "is that the one and the other, whether in the relation of statues to edifices, or the necessity of drawing and composing architecture in their paintings, are obliged to acquire a knowledge of this art, and to study the rules and the proportions relative to it." But a more immediate relation unites the arts together,—the art of drawing; and it may be easily perceived in what manner it necessarily applies to architecture. If the proportions given to this art were the result of those of the human form, there could be no doubt but that he who habituated himself to the study of them in the book of nature itself, would make more true and just applications

of them than those who are impelled by a mere practical imitation of works and edifices in which they are less sensibly imprinted.

It is inexpressible how much this practice is useful to an architect in the execution of drawings, even independent of the great light which may be derived from the study of the other arts, for invention, true sentiment of character, and resources of decoration. A knowledge of chiaroscuro effects of light, contrast of parts, and their accord or antipathy, furnishes him with all kind of resources; it shows him the faults which a flat and mute manner of shading and colouring designs will never make him perceive, which only discover themselves in the execution, and when it is too late to remedy them. There would result from a union of the arts an advantage to architecture which cannot be effected while each artist is occupied only in his own art. This advantage is the harmony and accord of the parts which concur in the composition of edifices. A multitude of modern constructions present the most ridiculous disparates, and the most senseless profusion of absurd, contradictory, and useless ornaments. Like the plants which spring adventitiously on abandoned edifices, the ornaments in question inundate all the members of architecture. The architect who is ignorant of his art, obliged to give up to the decorator the care of finishing his

edifices, has often seen the form and taste disappear under a burlesque mass of ornaments which degrade the aspect. The experience of this abuse gave rise to another. Being now too much on his guard against the exuberance of the decorator, and despairing of being able to proceed in concert with him, the architect omitted his aid entirely; for being ignorant of painting, he was unable to prescribe the rules by which it is regulated, or moderate the unlicensed efforts of the operator. The exterior of such of his edifices as required richness and delicacy to constitute their real character, being destitute of sculpture, presented the naked form of architecture, deprived of life, movement, and grace. In vain he pretended to draw from his art the beauties he would no longer owe to the other arts; his inanimate and uncoloured edifices offered to the sight only images of poverty, which, for being voluntary, were no less condemnable.

Professed architects have justly reproached some painters of having rendered the spirit of architecture unnatural in their edifices, by substituting decoration; and of having made the resources of their art predominant in the edifices. It is well known that for a long time painting and sculpture governed architecture, by which it lost its greatness and intrinsic beauty: but this circumstance must be attributed to the bad taste reigning at that

time in all the arts, to which indeed the painters materially contributed. If the edifices invented and conducted by the painters and sculptors of the flourishing centuries be examined, they will be found full of the sage and pure taste which reigned in their other works. It was not because Cortona and Boromini were painters that they employed licentious architecture, since Raffaello, Giulio Romano, Jean Goujon, and many other painters and sculptors, have left us models of the most regular and best reasoned architecture: but the one and the other applied to architecture the taste and style of the other arts which they professed, the principles of which, good or bad, according to the time, were common to architecture.

But whatever may be the strength of these authorities, and the consequences that may be drawn from them, a union of the different arts cannot be made at the present day. For though nature has united them, and their common interests draw them together, yet the modern form of education and manner of study tend to insulate and divide them. Timidity and weakness, the fruit of method so fatal to genius, make the idea of reuniting the connected arts chimerical, as they are separated by barriers which are become insurmountable. But if we can no longer require of an architect, with Vitruvius and Vasari, that he excel at the same time in painting and sculpture,

at least ought not a theoretical knowledge of these arts be required of him? They are indispensable, if he would avoid the abuses of which mention has been made. The art of drawing cannot be too much practised by him, whether it be for the figures which ought to ornament his designs, for ornaments of all kinds, the composition of which belongs only to him, or in fine for the direction of the workmen and artists, to whom he ought to communicate his ideas, and transmit his taste and style.

All the branches of knowledge hitherto enumerated form but the accessaries of the art; but architecture, above all other things, requires genius, or the talent of invention. What fineness of taste, what energy of mind does it require! The same fire which animated Homer and Raffaello ought to have inflamed Palladio, and must inflame every architect who aspires to fame, and wishes to appear in the first ranks of an art which is the base of all the others, and which first announces the degree of civilization, taste, and intelligence of a nation. The genius of an architect develops itself on contemplating the monuments of antiquity, which he ought to examine with reason and discernment, and endeavour to discover the few rules which they dictate; for originally the rules were but few in number, though subsequently routine and precedent greatly multiplied them.

An architect ought to commence early to invent and produce. As soon as he has acquired a general idea of architecture, a facility in drawing, and a knowledge of the most beautiful models, antique and modern, he should apply himself to compose. Invention, in architecture, is to produce from the imagination an idea of an edifice which is not copied from any other already in being; and the invention will be good if the parts are distributed with order, proportion, and commodiousness; if the ornaments are combined with sageness, elegance, and suitableness; if the edifice in its parts and total be appropriate to its intended uses and destination; and if it has all the requisite solidity. To invent so that the designs may be executed without difficulty, and obtain the approbation of persons instructed in the principles of the art, is the degree of knowledge in architecture at which an architect ought to aim. But it is much more difficult to attain than is imagined. The efforts and ambition of those who are destined for this art cannot be too soon directed to this object: they too often lose the most precious of their years in copying the works of others,—working through life on barren traces, without fruit and honour.

A taste and passion for the art are requisite to succeed; they are the least equivocal characters of true dispositions and versatility of talent. This passion ought to be such as to leave far behind it

all unworthy ambition of fortune and honours. If he balance a moment, the architect is no longer worthy of the name; he should quit the sanctuary of the arts, and add himself to the number of the courtiers of Plutus.

It is also required of the man who intends to devote himself to the noble labours of architecture, that he be possessed of such a mediocrity of fortune as will place him above the desire of riches, and make him despise the ordinary vile means of procuring them, by base intrigues and sordid speculations, which dishonour the art, and those who profess it. Honour ought to be the recompence of the arts: it cannot be conferred by the benefits of fortune. Those who think themselves rewarded by these, are unworthy to receive other recompence: they place themselves in the class of artizans, whence they ought never to depart. This nobleness of sentiment and rare disinterestedness are sure marks of the moral qualities required in an architect, and which the dignity of the profession render necessary. An Italian author observes, that probity amongst men ought to be more or less great, and is calculated in proportion to the quality and importance of their professions. And Vitruvius says, that an architect ought to be, for this reason alone, a model of all virtues. Honour, and not a sordid interest, should be the object of his proceedings. Laugier judiciously

remarks, that when the desire to enrich himself predominates, all sentiments of honour are perverted; and that the arts suffer by this baseness as much as the manners. This shameful cupidity debases the arts below the most simple trades, and to it may be attributed their actual discredit, and the general weakness they present. Architecture being more dependent than the other arts on the manners, customs, and taste of nations, is quickly degraded when an architect, attracted by gain, becomes the slave of the rich, and the mean instrument of their caprices; when he prostitutes his art, and sells to them the right of commanding him in its misapplication. A generous disinterestedness would be the most powerful arms he could employ against the fantasies of an ignorant luxury, those puerile ideas and fictitious wants, the offspring of effeminacy and sloth; and against those who would bend under the yoke of mode an art fitted to give law, and not to receive it.

An author proposed to render the proprietors responsible for the faults which they might occasion in edifices; and insisted that an architect had a right publicly to protest against the changes to which he might be constrained; and that this protestation should be fixed upon the edifice itself, and be co-existent with it. But until such custom be introduced, a true architect, jealous of the honour due to his labours, will never sacrifice it

to interested speculations, nor to the headstrong folly of proprietors. Inflexible in his principles, far from regretting the works which this rigour may cause him to lose, he will rejoice at having escaped the temptations to dishonour himself, and will wait for a favourable occasion, which cannot fail real merit, of developing his talents. An architect who happily blends in himself the knowledge and qualities here stated will merit the command of artists, and of being the moderator of the arts. By these qualifications architecture, or the art by excellence, may recover that pre-eminence over the other arts which it proudly occupied amongst the first nations of the earth.

IN WHAT ARCHITECTURE CONSISTS.

ARCHITECTURE consists in forming an edifice or building, of whatever nature it may be, so that it shall be solid, agreeable to the view, commodious, have all its parts in perfect relation to each other, and be of a convenable character, which character is always determined by the uses for which it is destined.

By a solid building is understood one which has all the parts bound with exactness, and of sufficient thickness to give them a proper consistence; and in which the footings, retreats, and necessary exterior inclination, are not neglected; so that the whole is fixed by an invariable equilibrium.

But as a building that is merely solid will have nothing agreeable to the view, or useful for the purpose to which it is destined, it is therefore necessary to add nobleness in the ordonnance, or proportion of the parts, and agreeableness and commodiousness in the distribution.

A building which is commodious or convenient is one whose parts are such as its destination require; and this destination determines the number and situation of the apartments, stairs, passages, and the communications, which should be free and easy, each piece showing its use and importance from the respective proportions, when compared one with the other.

It has just been asserted that the destination of an edifice determines its distribution and proportion, which is establishing a general rule for all nations; but the application of this rule is determined by the manners and particular usages of the nation in which the edifice is constructed, or the intention of those who erect it.

A well-proportioned building is one which in all the parts of its plan presents such harmony

in its divisions, that each of its parts has evidently an essential relation with all the others; it is therefore necessary, in the elevations, that the heights should be in comparison with the lengths, and that the apertures should be supported by symmetrical and proportioned planes. The genius of the art consists in proportion. It requires the deepest study, and a sure taste, as it alone decides the merit of the architect: it is applicable to edifices of all kinds, and is essential in the construction of the edifices of all countries. In this respect an architect, like a man of letters, merits the title of being an inhabitant of the universe, because his art is intelligible to all nations.

This observation was felt by the great masters of architecture, and induced them to comprehend all the laws of proportion in two rules, which they called eurithmy and symmetry; because, when they are well observed, there is nothing wanting on the part of the architect to merit the suffrage of connoisseurs.

Eurithmy, or proportion, is the agreeable relation of the parts to each other, and with the whole. From this accord, unity, and modulation, results the harmony of all the parts of an edifice, whether it be in the general division of the elevation, or in the interior and exterior decoration.

Symmetry is the uniform correspondence of similar parts, which ought to be the same in number

and disposition at each side of an edifice, in order that the whole may have an imposing appearance, and be easily understood.

To eurithmy and symmetry belong unity, variety, order, simplicity, and the progression from the simplest to the most ornamented. But architecture having necessity for its foundation there results, 1. That its beauty ought to imprint this character of necessity: the necessity of all its parts ought also to be apparent. 2. That the ornaments ought to be derived from the nature of the edifice itself, and result from the want which it might have of them. Nothing then ought to be seen in an edifice but what has its employment, and is an integral part. 3. That every part which is in view ought to serve some end. 4. That it be composed of nothing but what can be justified by good reasons. 5. That these reasons ought to be evident, because evidence is the principal ingredient of beauty. Architecture can never have any other beauties than those which come from necessity; and that which is necessary is always plain and evident, is never announced by great labour, and is contrary to all forced ornament.

Those who would see edifices in their proper light must incessantly examine them by these certain and invariable principles, which are drawn from reason, and are the essence of architecture. They ought to demand of each piece what it is;

for what end it is there; how it fills its office; if it contributes any thing to commodiousness and solidity; and whether it discharges its functions better than any other part if put in its place? Whoever adopts these principles, which are founded in reason, will neither be imposed upon by authority, celebrity, nor the torrent of custom. They will also observe the two following rules.

1. Some of which are of indispensable necessity in all kinds of buildings, and in each of their parts, and cannot be neglected without the risk of incurring eternal blame; such as false bearings, planes upon apertures, shapeless pediments, and out of place, penetration of pilasters, bastard orders, different orders on the same plan or in projection, as also the most solid placed under the most delicate, or the heaviest under the lightest, without their intermedials. These are necessary rules, drawn from the true principles of commodiousness and solidity, which properties ought to be found in every building, and not only exist but be apparent.

2. Other rules, purely accidental, are useful or agreeable on certain occasions, which may be used when required, or according to circumstances. The relations of the dimensions in the orders are not of a precision that admit of no variation. What necessity is there, for example, that the Ionic column should be exactly nine diameters?

and why the metopes perfectly square? But as it before has been observed, it is only in cases of the greatest necessity that these licenses should be taken; for care should be observed to give only a latitude of a certain circumference, and to endeavour to arrive at beauty by several ways; at the same time being attentive to those invariable principles and necessary rules, the transgression of which can only produce wanderings that will serve rather to shock our sight than enlighten and conduct our reason.

Justness of sight decides the accidental rules which may be omitted or modified, according to circumstances, not only in the harmony of the dimensions, but in the choice and number of the ornaments, and the quality of the forms. Is there a reason for not applying the Doric frieze to the Corinthian order? Yes; the delicacy of the one would be hurt by the force of the ornaments of the other.

Edifices appear beautiful in proportion as they present the least error; for architectural beauty consists in perfection, or in the absence of excess, or faults relative to the destination of an edifice, which ought always to be clearly expressed.

The application of the necessary and accidental rules rests on these two principal subjects: 1. On the principal ordonnance of the edifice, which is the form and distribution of its parts. 2. On the

decoration of the whole and of its parts, interior as well as exterior. These rules tend to produce a beautiful edifice in respect of its use, in which commodiousness and solidity will be combined.

After an architect has formed a precise idea of the destination of any edifice, it rests with him to execute it in the best possible manner. A sound judgment will enable him to determine, in all cases, what becomes the time, circumstances, persons, elegance, magnificence, and majesty; how to dispose the accessaries and adjacent objects; to overcome all obstacles by fortunate inventions, according to the nature of the site; to give it a fecund and varied appearance, and to prevent confusion in those parts where the different wants are found to be in opposition. To the architect also belongs, if the locality permit, the privilege of determining the extent of the edifice, and the number of its principal parts; of giving them a suitable size, according to the uses to which they are to be appropriated; of afterwards distributing and reuniting them so as to form a whole, in such a manner that each part will be found placed where it is most suitable or convenient, and that the total will present, interiorly and exteriorly, a commodious, solid, and beautiful edifice, analogous to its kind and destination. No part ought to shine at the expence of another; and while there is no appearance of excess, still nothing should be

omitted that could be desired for its completion. It will thus manifest the genius of the artist; and thus alone will it be beautiful in its details and total; and so much the more so in proportion as the total and its parts present distinctly and at the first glance a free accordance, and a combination that agreeably fixes the view, and excites in the spectator the various feelings of admiration, respect, joy, and surprise.

The sight of an edifice constructed in all the perfection of the art gives rise to an inexpressible pleasure and fascination in the beholder. It awakens in the soul noble and enlarged ideas. The spectator feels those delightful emotions and agreeable transports excited by productions bearing real marks of superiority of mind.

ON TRUE TASTE IN ARCHITECTURE.

AN enthusiasm for what is termed Gothic architecture is extremely prevalent at the present day; and amongst those who praise this kind of construction there are men of good understanding, and who have acquired a general knowledge of the

art, but whose judgment being perverted by a vitiated taste, confound themselves with a crowd of admirers possessing neither scientific principles nor taste. In every town and city of our little island they are erecting these lasting monuments of ignorance. Are they anxious to submit to posterity models proving that we have not, even at the present age, thrown off the barbarism of our ancestors? How are nations judged of after they have ceased to exist? Is it not by their arts? Is it not by these that the Greeks and Romans have survived their very ruins? How will future generations judge of this, when our country shall have fallen from its splendour and greatness into the class of ruined empires, and when the manufactures and commerce by which we have gained so much reputation have long ceased from amongst us? Will the taste we have displayed in architecture, the most durable of all the arts, survive our fall, and perpetuate our fame? Or shall we sink into oblivion, like the ages whose taste and example we follow?

The immortal Montesquieu plainly shows that the only true architecture is that of the ancients. "There are things," he says, "which appear varied when they are not, and others uniform although much varied. Gothic architecture appears varied; but the ornaments fatigue by their littleness, and they are so confused that no part can be distin-

guished from another, and from their number there are none upon which the eye can rest; which prove it to be unnatural even in the parts chosen to be rendered agreeable. A Gothic building is a species of enigma to the eye that beholds it; and the mind is as much embarrassed by it as when it is presented with a dark and obscure poem. The antique architecture, on the contrary, appears uniform. It has the necessary divisions, and as many as are required; so that the eye traces that which it sees without fatigue, and the mind finds sufficient to occupy it. It has also that variety which produces a pleasure to our senses. It is necessary that great things should have great parts: colossal men have colossal arms, large trees have large branches, and huge mountains are composed of others placed above and below: it is the nature of things that effects these. The antique architecture, which has few but great divisions, imitates great things: the soul feels in it a certain majesty that reigns throughout."

In order to form a judgment of these Gothic constructions, reduce them to half their present size. The edifice will then cease to impose on the imagination by its extent, and the illusion will disappear. The same reduction made on an edifice of an ordonnance according to the antique orders would present new beauties.

The Gothic mode of construction originated in

a corrupted taste, and an ignorance of the original rules and sentiment; it is a sort of monster engendered by a chaos of ideas in the night of barbarity; a heterogeneous mixture of confused remembrances, obliterated traditions, and disparates of models. Far from being able to trace in it the first steps of a new and rising taste, it exhibits the impotency of one that is aged, lingering in darkness on the effaced traces of a model which has disappeared. Place any productions of this species in comparison with the temple of Vesta, at Tivoli, which is a fragment of the antique architecture, and although very much less than the former constructions, it is in that respect alone most astonishing in the effect which it produces. This edifice is composed of twenty Corinthian columns, forming an exterior peristyle around the temple. The plan is circular, and of twenty-nine feet in diameter; its entire ordonnance is a continued circular pedestal, surmounted with an order of columns governing the body of the temple, the summit of which is crowned with a spherical arch, which causes the whole of the ordonnance to pyramid. Although these dimensions are very limited, the temple presents the most enchanting aspect, whether it be in the form of its plan, in the distribution of its different parts, in the beautiful proportion of its columns, or in the choice of the ornaments which enrich its frieze.

Gothic edifices are the greatest corruption of taste, and will remain lasting proofs of the absence of arts and science amongst those who gave this mode of construction birth, and of the ignorance of those who continue to employ it. Those who wish to acquire a knowledge of the nature and principles of the only true architecture, which is that of the ancients, should examine and study minutely and at large the examples which this work offers, because from these, as furnishing models the most capable to direct architects and enlighten amateurs, may be acquired the best knowledge of this first and true architecture. Do not imitate those injudicious architects, who by a false discernment have been led to prefer the productions of the dark ages to the majestic remains of the antique architecture. On these examples alone ought architects to accustom their sight, and form their judgment by the ideas of those excellent guides, who being born amongst the most enlightened part of mankind, and in the purity of the finest climate of the earth, were so clear and intelligent, that they saw those things as it were naturally that we, after a long and painful study of the antique architecture, can scarcely discover. Examine the heaps of antiquities derived from the hands of the Greeks and Romans, which have escaped the injuries of centuries, and afterwards the Gothic constructions, or any others deviating from the first; what a

singular contrast! The first offer perfect imitations of the beauties of nature, and are models filled with such striking details as to leave on the mind a deep impression. The Gothic, on the contrary, presents the most monstrous assemblages and ridiculous proportions, the details of which are of a most fantastical and depraved taste, and formed without rules or order: they are pitiful productions of ignorance and barbarism, and dishonour the artists who practise this mode of construction. It is an incontestable truth, that architecture partakes of the manners of a nation, and that when cultivated with true taste will, sooner or later, shine with a brilliant light, elevating and honouring the merit of that nation, and giving it a marked superiority over those countries that have neglected it.

THE CAUSES WHICH PREVENT THE PROGRESS OF CORRECT TASTE IN ARCHITECTURE.

THE causes which principally operate to produce a depravation of taste are of a twofold nature; namely, the defective knowledge of those who exercise the art on the one hand, and on the

other the indifference of proprietors of buildings, who, from their ignorance, are easily imposed upon, and are generally content to secure economy at the expence of ability. The natural consequence of the operation of these causes is, a seductive influence on the minds of the greater part of the opulent individuals who build, in the choice of persons to superintend the erection of their edifices. They employ any man as architect who has sufficient knowledge to enable him to talk on the subject, and possesses a habitude of commanding workmen, a facility of procuring draughtsmen and inspectors, and has the courage to undertake an edifice of importance. The idea alone, though founded in a mistaken view of economy, of procuring, at less expence, a building which the eyes of the multitude cannot discover to be wanting either in nobleness or beauty, prejudices them against architects of undoubted ability, and blinds them to numberless errors, which are discovered only when the work, submitted to the judgment of true connoisseurs, betrays the irreparable faults which have been committed against the character of the ordonnance and disposition of the building. These injudicious proprietors may be compared to patients who abandon the treatment of the most serious maladies to persons they had employed in trivial infirmities, and only call to their aid those men whom art and experience have rendered justly

celebrated, when their wasted frames no longer offer any thing to operate upon. This comparison will appear just to any one who knows how to appreciate the difference between one who has made a profound study of the principles and rules of architecture, and is qualified to direct their application, and one who has a blind routine for his guide, or at most a superficial knowledge of the ordinary practices, with which he dares to undertake even things of the utmost importance. These circumstances have too long been barriers to the progress of architecture, and there is great probability, if we may judge by the present mode of constructing large edifices, that the art will become still further debased, if those who control their erection, and the rich proprietors, do not instruct themselves in its principles. How long must we see those who profess and those who ought to encourage this sublime art, to which the Divinity owes his temples, sovereigns their palaces, justice its tribunals, and humanity its hospitals and asylums, subject it to degradations which are at once disgraceful to a great nation, destructive of its genius, and unworthy of liberal ideas! Without architecture, what durable remembrances can a nation leave to posterity? Athens and ancient Rome are no more, and yet these cities still live in the monuments they have transmitted to posterity.

ON THE UTILITY OF ARCHITECTURE, AND THE IMPORTANCE OF PROMOTING A CORRECT TASTE IN THE ART.

THIS subject is of greater importance to the interests of a nation than is generally imagined; and it is a certain truth, that by endeavouring to conserve a depraved architectural taste, the only true architecture, which is that of the ancients, will be thereby greatly discouraged. This vitiated taste cannot be too severely deprecated, when it is considered that architecture is the most distinguished of all the arts which the pleasures and necessities of man have called into being, as it not only contributes largely to the comforts and softens the pains of life, but transmits an undying name to future generations. If it be examined in respect of utility it surpasses all the other arts. It conduces to the salubrity of towns and cities, and to the health of man; it secures property by the just and enlightened application of its principles, and prevents those melancholy occurrences which result from ignorance of its laws. But if we consider its relation to the other arts, and to the glory of nations, what art can pride itself of such a noble destination? Not less than painting and sculpture,

it eternalizes great actions and their authors. By its aid famous conquerors may hope to transmit their triumphs to posterity; by it nations annihilated for ages have survived their fall in their noble constructions, whose very ruins have resisted the ravages of time. Depository of the glory, the taste, and the genius of nations, it testifies to future ages the degree of power or feebleness of empires; it stamps the seal of honour or contempt on the princes that have employed it, and serves as a rule by which future generations may appreciate the character of those who are no more. Destined necessarily by its nature to be subordinate to the taste displayed in different ages, it eternally deposes in their favour, or witnesses against them. The great, in all ages, ambitious of renown, have regarded architecture with an esteem which proves how sensible they were of its importance in obtaining the suffrages of posterity: and all sovereigns jealous of the honour of their reign have confided to it the perpetuation of their fame, having encouraged, protected, and caressed it.

THE GENEALOGY OF ARCHITECTURE.

ARCHITECTURE did not commence to be an art in the countries into which it was introduced till its inhabitants had attained a certain degree of civilization, opulence, and luxury. It was then that man, removing more and more from rustic labours and occupations, and seeking society in cities, endeavoured to substitute for the pleasures of nature, which were lost to his view, those of the arts, which are the imitators of nature. Before this epoch architecture ought to rank only amongst the occupations necessary to the wants of life, which in those early days being very limited, its use was confined to the making shelters from the injuries of climate, and the inclemencies of the seasons. It was from these rude shelters, which varied in form in most countries, that those remarkable differences originated which we find impressed on the architecture of different nations.

The first model, rude as it was, had in it certain characters which have never been lost sight of, and which may be traced in edifices of the highest grandeur. But whose eye is sufficiently exercised

to detect the delicate shades in all countries? When the art had arrived at the greatest perfection, it was often attempted to search after its infant progress; but was it not then too remote for discovery? We are doubtless in want of the means to make accurate researches amongst people separated from us by an immense interval of centuries and of place; and likewise of gaining a positive knowledge of the exact sites of the states founded by the first societies, their physical situation, the nature of their climates and productions, the number of inhabitants, their origin, first social institutions, modes of life, and such other causes as account for the variety in the modes of construction of different nations. Nevertheless, the general differences remarked in the architecture of different people of the earth, may be attributed to the three distinct states which nature seems to have assigned to man; for it is certain that these had a necessary influence on the first habitations of natural life, which in all countries have served for the models of architecture.

In primitive times, man, docile to the hand of nature, received from it the three states or modes of life which distinguish, even at the present day, the different nations of the universe. Those aborigines, according to the nature of their climate and locality, must have been chasers, shepherds, or agricultors; and the first habitations, analogous

to these three kinds of life, could not but be adapted to their wants, and bear very distinct characters.

Those people or nations who lived by the chase (and in the same class the Ichthyophagers are included) could not for a great length of time have built themselves shelters. The long courses the hunters made prevented them from watching their property, which must have been composed of few things; and they found it more convenient to make hollows in the rocks for their dwellings, or to profit by those which nature offered them in its caverns. It was the same with those who lived by fishing: passing a sedentary life on the sea shores, the sides of rivers, or the borders of lakes, they always made themselves such like abodes, or took advantage of those already formed by nature. The little industry which this mode of life required, and the natural idleness which followed it, was sufficient to induce them to prefer the dwellings presented by nature to those of art. This fact is proved by experience at the present day, as these descriptions of persons continue to adopt the same plan of life in those countries where the arts of civilization have not extended their beneficial influence. The pastors or shepherds, as they were inhabitants of the plains during a great portion of the year, could not make use of the retreats hollowed and prepared in the mountains and rocks by the hand of nature: being

obliged continually to seek change of pasture, and thus lead an ambulatory life, it was requisite to have dwellings, or shelters, that could be carried with them wherever they went; and hence sprung the use of tents. But the active operations of agriculture requiring locality of situation, necessity suggested the propriety of building solid and fixed abodes. The agricultor then living on his own grounds, and in the enjoyment of his property, had to store his provisions; it was therefore necessary to have a habitation at once commodious, safe, healthful, and extensive: and the wood cabin, with its roof, was soon erected.

Such are the three states of natural life; and to these may be attributed the origin of all constructions, and the differences of taste met with in different nations. It is impossible for these three modes of life not to have produced a sensible expression in architecture, and very remarkable varieties of style. The proof will be found visibly imprinted in the works of art which succeeded these rude sketches of nature. The simplicity and truth of this theory cannot be denied, since it is so far removed from the spirit of system as to ground on that circumstance a convincing argument in its favour.

The strange contradictions found in all works which treat on the birth of architecture have been occasioned by not having perceived this triple

origin, and by endeavouring to subordinate to one system alone the various productions and effects of an art which must have been diversely modified according to local circumstances. But it would be an erroneous idea to suppose that each country had one principle only for the results of this art, since it is probable that architecture had in certain nations a double principle, as may be seen in the Egyptian architecture. Though other circumstances might have influenced the formation and taste of the different architectures, they will nevertheless be found dependant on the causes just mentioned. It is particularly necessary to trace the art to the three states of natural life of the first societies of men, and to learn the reasons of the great variety observable in it, in order to prevent the confounding of the art of one nation with that of another. Without this knowledge the risk would be incurred of falling into the error of forcing into one system the most contradictory and discordant ideas, or of substituting chance for the natural order of things. Chance or caprice might have had influence in some of the detached forms of architecture, in the details, or in some of the objects of decoration; but it could not have produced the peculiar and characteristic taste of each country, the principle of which may be clearly distinguished in their edifices. Should there then be any hesitation in acknowledging the causes, when, independently

of all other considerations, the effects alone are sufficient proofs?

Some philosophers, struck by the prodigious excavations made by the hand of man in many parts of the globe, have endeavoured to find the birth-place of architecture in subterrains only; but by generalizing this system too much, and extending its application to all the nations of the universe, they have fallen into gross errors. Subterrains have been found in almost all the nations of antiquity; but philosophers have put themselves to little trouble to discover the motives for making these excavations, which were much varied in their forms. It is known, however, that these singular and prodigious works in many places are nothing more than the natural and progressive result of quarrying. There are many convincing examples of these quarries; for instance, such as those of Syracuse, which lose all idea of being marvellous, when it is remembered that this immense city, in all its constructions, employed only the stone cut from its mountains. Many other proofs of similar errors might be adduced, as where the catacombs, sepulchres, and hypogeums, the depositories of the dead, have been blindly mistaken for the first habitations of the living. Hence it is indubitable that the nature and destination of a great number of subterrains have been misunderstood; and thus has a very false principle been applied to the

architecture of particular nations, which, though it may sometimes happen to be correctly used, cannot be applied universally. It requires then the assistance of history, a knowledge of the manners of a nation, of its origin, and of its first mode of life, and to be acquainted with the parallel of its subterrains with its architecture, and the predominant style in it, to decide such subjects. When this knowledge is gained it will be owned that the Egyptian architecture was governed by the taste of the subterrains, which formed the first habitations in this country, the natural and immemorial employment of which was never lost in this nation. The massive and colossal character of their constructions has too much resemblance to their most ancient subterrains, and to their grots, afterwards hollowed and embellished by art, to suppose any other origin to this style of architecture. And though afterwards they acquired the art of joining the composed forms, and the parts indicative of the carpentry, to this primitive taste, it may notwithstanding be perceived that wood was never the first type of the Egyptian architecture.

The same spirit may be discovered in one part of the Asiatic architecture: the climate and the same physical causes must there have inspired the same taste for subterraneous dwellings. The mighty works of this kind that are admired even at the present day, but the epoch of which has been lost

in the night of time, leave no doubt as to the probability of their origin. The columns of the Pagoda Elephanta, cut in the rock, bear no resemblance to a tree. Their short and massive proportion, the forms of their capitals, and all the accessaries, are so different from the columns resulting from carpentry, that it is necessary to be not only blind, but partial, to refuse a derivation so natural and reasonable. But from the architectural taste of India can that of China and Japan be inferred? The first certainly results from stone, or the hewn caverns and grots, and is distinguished by the privation of a roof, and by the hugeness of its massive proportions; but must the same origin be assigned for the Chinese architecture, in which wood is particularly predominant, and in which the lightness, the ornaments, and the general taste, show little resemblance in the formation, or concurrence in the productive causes? M. Paw observes, that one cannot mistake the object which has served for a model to the first habitations of China; they have imitated a tent; and this is conformable to what can be learnt from the truest accounts of the primitive state of the Chinese, who, like the Tartars, the Nomades, and the Scenitæ, encamped with their flocks before they had cities. It is impossible not to discern this origin in their curved roofs made in the pavilion form, in the little solidity of their edifices, and in the peculiarity of

their constructions. When a Chinese city is beheld, it may be said that it is a fixed camp; and the immense extent of their cities proves that their houses are not sufficiently solid to support several stories.

It is thus certain that the wood cabin with its roof, which is generally taken for the universal model of the architecture of all nations, could not have given birth either to that of Egypt or China; but it was indubitably the type of that of the Greeks, amongst whom, as will be hereafter shown, the art finding a model at once solid and varied, learnt to transfer to stone the forms of the carpentry, and to appropriate, by a happy imitation, the first essays of necessity. This kind of construction must have originated in an agricultural nation.

The principal intent of this article is directed to the art of architecture in its limited sense, and that of the Greeks having a particular claim to this name, it is a knowledge of its principles, origin, progress, nature, and history, which ought to be more strictly the object of our researches. Without wishing to depreciate the merit of the architecture of other nations, it is impossible not to assign to that of Greece a superiority over all others. Independently of the particular advantages enjoyed from it, it alone merits the name of being an art, as it is reduced to fixed

and just proportions, which may be sought in vain in the architecture of other nations. Again it alone has claim to this title in producing in its first essays a simple, rich, and varied model, the imitation of which has afforded the means of bringing the art to the perfection it has attained.

It is granted that the architecture of other nations is equally the offspring of nature; but it is in vain that theirs contends with the Grecian for superiority. This architecture does not contest for eldership, nor the advantages of richness and ornaments; but there must be perceived in it a kind of predilection of nature, in the *partage* which it appears to have made to it of all its greatness. Above all, a pre-eminence of beauty is remarkable in it, at which the others cannot arrive, because they can never acquire those rules and proportions which form its principles, and because they can never enjoy, from the nature of their origin, the same happy means of developement.

It was, incontestably, carpentry which served as a model to the Grecian architecture; and it must be admitted, that of the three models which nature presented to the art, this is the most perfect and elegant. In it both unity and variety are amply displayed. The subterrains indeed already seemed to present to the art a model so imposing and accomplished, as to dare imitation to undertake any thing beyond it. In the tents also the art

found plenty to imitate; but this model being deficient in solidity, the architecture derived from it could not acquire that most desirable quality of all, and of which the appearance is as necessary as the reality. Extreme heaviness and lightness were the consequent results of these two imitations. There is too little to imitate in the first model, or rather there is nothing to imitate, since there is not even a change of matter; and in the second, the imitation could not be otherwise than vitious and puerile, because there is too great a difference between the matter of the model and that employed in the copy. The art must necessarily have been impoverished in an imitation where there could be so little analogy to its model. Again, in the subterrains there reigned such a monotony of forms as could not but communicate to architecture the perpetual repetition of the same parts. And as the tents easily admitted of being folded with the most capricious taste, this circumstance must have communicated ever-varying and uncertain forms to the art derived from it, and a fantasticalness in the details incompatible with that simplicity and sageness of ordonnance which are so estimable in the Grecian architecture.

The carpentry of the Grecian architecture being at once solid and light, or at least susceptible of acquiring more or less of these two qualities, proved a fortunate medium between the two former

kinds of architecture. Wood, as Algarotti observes, was the most proper matter to furnish the art with the greatest number of modinatures, modifications, and ornaments of all kinds. By attention to the subject it may be seen, without difficulty, that from its nature it may be made to comprehend all the parts which can contribute to utility and beauty, and that the most simple wood cabin contains the germ of the most magnificent palace. The subterrains no where offered any thing but plain surfaces. In those hollowed by necessity nothing was presented that could convey the idea of parts, relation, or proportion; and what was invented for their decoration, being only the fruit of caprice, and not of necessity, could not be reduced to rules: the art therefore derived from it, in its subsequent imitations, could not have rested on any scientific basis. Carpentry, on the contrary, every where produced just projections and elevations, a judicious distribution of parts in relation to each other, and of the bodies in advance or in retreat; and thus a rich and varied picture was offered to the eye. The art, in carpentry, was subjected to a reasonable employment of objects and parts, which could neither be transposed nor decomposed by the spirit of decoration, without doing violence to the beauties of the model which was imitated, and to the constant and invariable principles derived from it. The roof was an

abundant source of riches. But the art was not perfected by the first sketch of architecture; it afterwards required calculations, intelligence, a just disposition of pressure and resistance, an accord in the equilibrium of forces, and all the knowledge which was matured in after ages, to raise it to its present eminence. It may then be affirmed, that without the aid of carpentry, architecture would never have been an art subjected to rules and proportions, determined by nature and judgment.

The source of the art being discovered, it should be followed step by step in its course, and the manner in which it was formed and composed in the bosom of nature, if the expression may be allowed, should be carefully examined, till it is traced to its greatest developement. The authors, whether ancient or modern, who have written on the art of architecture, furnish no authorities that can be depended on for the support of this theory. Their testimony does not accord with the principles which are about to be explained; an appeal, therefore, shall be made to the monuments themselves, the inspection of which will prove the truth of those which follow.

Trees or pieces of timber sunk in the ground were at first used to support a shelter of any kind, and were the origin of the detached columns which have since served as supports to the porticoes of

temples, and are amongst the greatest riches of architecture. As trees are of a greater circumference at their lower extremities, and diminish in rising, the diminution of columns was suggested by it. This is strikingly illustrated in the Grecian Doric order. "Non minus quod etiam nascentium opportet imitari naturam, ut in arboribus teretibus abiete cupresso pinu, èquibus nulla non crassior est ab radicibus deindè crescendo progreditur in altitudinem, naturali contractura perœquata nascens ad cacumen." Vitruvius, L. 5. And elsewhere, "Contractura columnarum ducta est à nascentibus arboribus quæ ad radices crassæ sensim se contrahentes fastigantur." These timbers, consisting of trunks of trees planted in the ground, offered not as yet the idea of bases and pedestals, as is seen in the Doric order, which is without base. But in the course of time the inconvenience of this method was perceived, as it exposed the wood to rot; and to remedy this inconvenience, pieces of wood were placed under each support, to give it a better foundation, and to protect it from humidity. This practice may be traced in some of the ancient edifices, in which the columns have no other base than a block of stone. But afterwards the number of pieces of wood employed for the base were increased, in order to give greater elevation to the supports, or to afford better security against the effects of humidity. From this multiplication

of blocks as footings sprung the torus and the other mouldings of the base, an origin far more probable than that of ligaments of iron, as imagined by Scamozzi and others. It is also more conformable to the nature of capitals, in which it is known that the same proceeding was employed. After beginning with a simple abacus several others were afterwards added, which were enlarged as they rose one above another, in such a manner that, as the base was to the column a kind of footing on which it rested more solidly, so the capital made a head more capable of receiving and supporting the weight and form of the architrave.

The architrave announces by its name what was its origin, and the way in which it was employed. This was nothing more than a large beam placed horizontally upon perpendicular supports, and was destined to receive the covering of the whole edifice.

The joists of the floor or ceiling being placed upon the architrave give the space or height of the frieze; and thus the joists are seen figured by the triglyphs in the Doric, and sometimes by the consols, as in the Composed Corinthian of the Coliseum. Vitruvius gives another origin to the triglyph, which he supposes to have been an ornament applied upon the extremities of the joists; but this opinion does not affect the previous theory. There may be observed on the ceiling of the tem-

ple of Theseus, at Athens, that at the meeting of each triglyph are found strong joists of marble, the disposition of which is conformable to the ancient construction in wood, and to the forms of the carpentry. The intervals between the triglyphs were named metropes: they continued to be empty spaces for a long time, as may be learned from a passage of Euripides, in the tragedy of Iphigenia, where Pylades advises Orestes to creep through the metopes, and by that means to introduce himself into the interior of the temple. The empty spaces were afterwards filled and ornamented in different ways. Sometimes the extremities of the joists were covered with boards, together with the whole of that part called the frieze; and then the signs of this construction disappeared altogether from view, as may be remarked in several of the orders, although the place of the frieze has always been observed.

The inclined rafters of the roof composed the cornice projecting from the edifice, in order to secure it from rain. This great projection of the rafters of the roof may be remarked at the present day in the houses of Italy. And hence sprung the modillions and mutules which immediately support the roof, and which were for a long time made in an inclined plane; from which may be traced back their origin and ancient destination.

They may be seen thus disposed in many of the antique edifices, and more particularly in the temple of Minerva, at Athens.

The roof necessarily gives the form of the pediment. "Posteà quoniam per hibernas tempestates tecta non poterant imbres sustinere, fastigia facientes luto inducto proclinatis tectis stillicidia deducebant." Vitruvius, L. 2, c. 1. This invention became the source of one of the greatest beauties in architecture. Cicero judged thus when he said, "It is not to pleasure that we are indebted for the pediment of the capitol and those of our temples. Necessity suggested the form, for the better draining off the water: nevertheless its beauty is so very great, and it is become so necessary to edifices, that if a capitol were to be built in Olympus, where it was never known to rain, it would, notwithstanding, be necessary to give it a pediment." Capitolii fastigium illud et ceterarum ædium non venustas sed necessitas ipsa fabricata est. Nam cum esset habita ratio quemadmodum ex utraque parte tecti aqua delaberetur utilitatem templi fastigii dignitas consecuta est, ut etiam si in cœlo capitolium statueretur ubi imber esse non potest, nullam fine fastigio dignitatem habiturum fuisse videatur. Cicero, L. 3. of Orat. The pediment is, and ought to be, the form of the roof. The Greeks, living in an exceeding mild and temperate climate, had no need for strong and solid roofs to

resist the inclemency of the seasons, or the duration or violence of the rains. The great inclination given to their pediments proves this fact. The Romans, situated in a less propitious climate, gave to their roofs a greater rise, and made them more solid. On going towards the north, high and pointed roofs will be seen, on account of the quantity of rain, and the abundance of snow, which falls in northern countries; whilst this form of architecture disappears in the south, where all the houses terminate in terrass. The height of pediments, which is always subordinate to that of the roofs, seems to have become a kind of visible measure of the different degrees of temperature.

In this anatomy of the cabin may already be seen the disposition of the principal members of architecture. The posts which supported the main beam were at first placed very near each other, in order that the architrave, which bore all the weight of the construction, might not be bent or broken by the distances being too considerable. But to enlarge the intercolumnations as much as might be desired, and to remedy the weakness of the beams, pieces of wood were contrived to fit in between the pillars of support in an oblique direction, so as to form a kind of arm or bracket, supporting and strengthening the architrave. From this contrivance arcades, with and without columns, had their rise. In wood bridges,

in particular, these first operations of carpentry may be observed, which were the origin of arches, in the construction of which stone was afterwards substituted for wood. Nor is it to arcades only that carpentry has given rise, but to the different ways of employing arches, which themselves bear evidence of the imitations. Any one may be convinced of this by comparing the proceedings in the employment of carpentry in ceilings, in the various forms of groins and arches, in ogive, lunette, &c. which took their figure and conformations from the inventions of cross timbers, and from being directed, as before shown, to support the master beams.

Whether it was for a better defence against the injuries of the weather that it was devised to fill up the spaces caused by the intercolumnations, or to give greater solidity to the building, there were still sufficient openings left for doors and windows; and this was the origin of what by some is termed architecture in basso relievo, where engaged columns project from the face of the wall half or two-thirds of their diameters. The supports which gave birth to columns were at first cut in the form of the trunk of a tree; afterwards they were made square; and thus gave rise to pilasters, which are square pillars, engaged more or less in the thickness of a wall.

But to render habitations more wholesome, and to secure them against humidity, it was soon

contrived to raise these constructions of wood upon large beams or timbers placed horizontally upon each other; the interior was then filled with earth and levelled. From this contrivance pedestals, stylobatas, and continued basements, had their source. But as this elevation might become dangerous, and alter the solidity of the edifice, its height was stayed by spurs, which have since been adapted to walls and fabrics in stone. Thus also in the buttresses or water-breakers which defend the piers of stone bridges, and cut the current of the water, are seen the imitation of the stakes placed for the same effect in wood bridges, of which the famous bridge of Julius Cæsar, upon the Rhine, gives us an example. In following the traces of imitation, many other details may be discovered, that carpentry has communicated to architecture. In order to preserve the doors and windows of the primitive simple cabins from the dripping of rain, small projecting pieces were placed over them, in the manner of a shed, hanging aslope from the wall, or in the form of a small roof, so as to throw off the water either at front or on each side of the opening: this was the model of the pediments and chambranles, which have since ornamented doors, windows, and niches, and have been made angular or centered, and alternately intermingled for pleasure and variety. The entrance of houses, above all, required such precautions:

and these first inventions were continued in many countries till they became metamorphosed by art. There may yet be seen in many places over doors, large projecting roofs, convenient for different uses, which suggested, according to the climate, the various methods of decorating the entrances to buildings.

The horizontal and transverse joists have been the model for the compartments of ceilings, and all the accessaries of soffits. In Italy the ordinary method of forming a ceiling proves the incontestability of this origin.

There might be drawn from this unerring and fruitful principle a number of other applications to the art of architecture, as in the variety of the proportions, the invention of the orders, the origin of the decorations, and a multitude of ornaments, such as flutings, grooves, foliage, leaves, &c. But it is unnecessary in this place to proceed further into the minute details of this subject, many of the applications made to ornaments being mixed and equivocal; and numbers of them, being the posterior inventions of pleasure rather than necessity, and not entering the general system of architecture, ought to be excluded from this theory. It is sufficient to have proved that carpentry is the sole principle of the Grecian architecture. It remains now to be shown, that this imitation of the carpentry of the cabin is one

of the principal sources of the pleasure produced by architecture, the spirit of which can be neither renounced, changed, nor misapplied, without affecting the laws of nature and verisimility.

It is evident that of the two substances, stone and wood, which were employed, according to the different countries, in the first essays at constructing habitations for man, that wood furnished the art of imitation the greatest variety of modifications and resources; and when stone was substituted for wood, the art, in preserving all the forms of the first substance, enriched itself still more by the suggestions of the latter, and so united the qualities of both. It may be further remarked, that it owes to the other arts the combinations of proportion and beauty, the germ of which existed in the carpentry.

There are many persons who blame this imitation of the first constructions in wood: they dislike that stone should be the representative of another material, and complain of marble being thus degraded by taking an inferior character, and being made to assume the poor and miserable forms of the first cabins. They wish that the art should draw upon the properties of each substance for diversity of forms and taste. It has already been shown that in copying from stone itself, it has offered no pleasing forms to the art, no variety to the eye, nor agreement to the mind. This is proved by the

cold sameness, and tasteless elevations in the Egyptian architecture.

But it would show little knowledge of the essence of the arts, the nature of their power on the imagination, and the means by which they please, to take from architecture this agreeable fiction, and happiest of inventions; to deprive it of this ingenious mask, which associates it to the other arts, permits it to appear on their theatre, and to rival them in usefulness and excellence.

By this happy delusion man enjoys in architecture a most delectable pleasure. Divest it of the imitative art, which is its most pleasing charm, and that pleasure is lost to him. The habitual fictions of architecture are in part the cause of the pleasure this art procures him, by the imitation of the carpentry of the cabin, which is at once delusive and real. Even if it were proved that this imitation does not exist, and that it is only an ingenious system, the product of after invention; yet all that can be drawn from this proof is, that, though the primitive cabin were not so constructed, necessity demands that it should have been; and this would be conceding to the art the merit of having created a model, the imitation of which would convey still greater pleasure, inasmuch as the supposed primitive constructions ought to have been its prototype.

But it is not thus that things are invented: all

the inventions of man are drawn from nature; and if this principle may be perceived even in those things, the traces of whose origin are lost, would it not be absurd to refuse it to an art which has faithfully preserved the happy tradition of its origin, and all the titles of its genealogy? But what is this pretended imitation? demand some persons who would throw off the yoke of rules. Is it not a sophism,—a theory founded on precedent and habitude? Nature ought to be the basis of all imitation; but can the first rude essays in the art of building be ranked amongst its productions? Nature does not produce the columns, capitals, and entablatures of habitations; all these, in their origin, are the fruit of an imperfect art: why then give the first rough sketches of the art as a model to it? If nothing in nature presents a perfect type, the art can have no laws but what are imposed by itself; why then enslave it to those laws?

It is, doubtless, well known, that this imitation in architecture is much less absolute than in the other arts, which model directly after nature; and it will shortly be seen that it is not precisely in this way that architecture ranked amongst the imitative arts, but by a law of imitation much superior to that which governs other arts. Yet if this model is not in nature, as insisted upon above, she is nevertheless its author; for though not her work, it results from her laws; if not

produced, it was at least suggested by her. This art and nature are so united, that to renounce the one would be to renounce the other.

What is understood by the wood cabin which is asserted to be the model of architecture? And what is meant by the imitation of it? It is not a servile copy which the art has adopted; and though the period at which the model existed is distant, the tradition of it has been preserved, and the imitation is so much superior as to leave the model far behind. The trees cut in the manner of supports have not been, nor could ever have been, faithfully copied. The invention of the orders and proportions has greatly surpassed the first type; indeed, to such a degree, that to return to the type would be endeavouring to attain perfection by conforming to that which is not perfect in itself. "Stultissimum est ad imitandum non optima quæque proponere." Thus, though this imitation of the forms of the cabin is an unquestionable truth, and demonstrated by architecture, there may still be found those that will not be prevailed upon to admit it. Though, however they may refuse to acknowledge in the matter and form of the cabin the original model of the art, the judgment which presides in its composition, in the principles of utility, affinity or convenance, order, and symmetry of disposition, are not the less manifest. If we could not prove that the cabin had been mate-

rially copied, is it not evident that the simple and true maxims which directed its fabrication exist in the principles of the art? Nature certainly did not form the cabin; but it guided man in its formation by a principle which could not mislead him, and which caused him to transmit its impressions to his first rude essays. This principle is to architecture as an axiom to a moral. But if it could be established, that this is only a fictitious data, and a sign of convention, what would it amount to? The principles on which the cabin in question is constructed are to architecture what figures are to mathematics; and though this shell be abandoned, yet the principles on which it is established are so impregnable, that to attack them would be as idle as to combat a shadow, or to contend with a chimera. Those who have endeavoured to proscribe the imitation have succeeded only in corrupting it, and have adopted, in spite of themselves, and without perceiving it, the laws they conceived they had rejected, and which it is impossible to renounce. They repulsed the rigour of its laws, which, by setting limits to fancy, are the happiest safeguards of the art. But in their vain innovations what have they changed or effected, since they have always conserved all the constituent parts of that which they reproved? All they have effected has been to transpose the parts, or rather to discompose them. They have changed simple

combinations into those that are complicated, natural order into fantastical disorder, symmetrical forms into irregular ones, proportions easy to be understood into others difficult and compound; and yet they never could substitute other members for those of the cabin. In these disorganizing proceedings it has been their mistake to suppose, that to confound was improving; to displace, inventing; and to innovate, making perfect. But their efforts have proved, that a rude imitation of the laws of nature has the advantage over their unmeaning inventions, and that the imitation of the cabin, real or fictitious, cannot be abandoned, without renouncing the principles which it has demonstrated to be strictly correct, and abjuring nature, which prompted and imprinted them.

Can those who make exceptions against the cabin, and reject its imitation, dispute the following maxims, which are manifested in its construction; viz.

That the strong ought to bear the weak:

The solidity ought to be real and apparent:

The employment of all the parts ought to be justified by necessity:

Unity and variety constitute beauty:

Nothing is beautiful but what is useful and good:

The parts ought to be subordinate to the total:

Symmetry and regularity are inseparably united to order and solidity:

And that simple proportions are the most beautiful.

To these might be added other rules resulting from the first essays of necessity, and the subsequent operations of the art. Whether the existence of the cabin be real or imaginary, it is certainly the theorem of all these truths: and who would dare proscribe its imitation, if it be a visible rule, and a material and sensible example of the principles which constitute architecture? The excellence of the imitation is clearly proved by the reality of the model, the necessity of the copy, the utility of its principles, and the pleasure man finds in it. The artist, unless he entirely change the model, ought rigorously to follow the rules and laws which it prescribes. It cannot be followed in certain parts and abandoned in others: obliged to be consequent in the imitation, it ought to be conformed to in all that it exacts, or be entirely renounced. It is only by placing the model before him, and tracing the object of his imitation, that he can hope to please. If he happen to lose sight of this rule of conduct, or pass an instant the bounds of an exact imitation, he may be seen falling by degrees into a disorder and confusion of ideas which render him the sport of the most extravagant and false combinations. No more clear and precise ideas present themselves; all is unnatural: the forms are continually

changing, the signs of which alone remain, and become at last unintelligible. The columns are no longer the natural supports which the proportions between them, and that which they have to sustain, ought to make apparent; they become objects that might be dispensed with, the frivolous accessaries of a needless ostentation, of which the disposition appears no longer to appertain to architecture. The entablatures are no more the representation of the parts which compose the roof, but are broken and turned in a thousand ways; the pediments cease to represent the roofs; straight lines are succeeded by curved surfaces of all descriptions; and the plans of edifices being perverted, unity, regularity, and proportion no longer exist. All the unskilful forms that the pencil can produce are realized in durable substances, and the strength and skill of workmen are prostituted to a warped imagination. The ornaments absorbing the members, and the accessary devouring the principal, there can be no law between the parts, nor correspondence between them and the total; and the construction itself must disappear under this profusion of licentious decoration. From this destruction of the principles of architecture, and introduction of anarchy and shameful confusion into it, the art must become a puerile exercise for the artists, and an

enigma for the generality of mankind. Such, however, is a picture of modern architecture.

On the contrary, the edifices, both ancient and modern, that possess the most general and least contested reputation for beauty, are those in which this scrupulous imitation of the primitive type of the cabin has been most carefully observed. The esteem in which they are held depends on the degree in which the principles of the cabin have been applied. There remains in France, says Laugier, a most beautiful monument of the ancients; this is what is called at Nismes the Maison quarreè. The beauty of this edifice is admired, not only by the connoisseur, but by those also who are ignorant of the rules of the art. Why? Because the whole of it is according to the principles of the rustic cabin. A prolonged square, where thirty columns support an entablature, and the roof terminated at the two extremities by a pediment, are all that are needful: this assemblage has a simplicity and nobleness that strike all beholders.

To guard against the digressions just spoken of, it is absolutely necessary that the antique architecture be studied with attention, as at the period more immediate to its origin, the purity of the art was unsullied by the corruptions which were afterwards introduced. It is in the works of that

period that the sage and true developement of a well understood imitation may be read; and it is only by the faithful translation of these, that a correct intelligence of the original proposed to be copied can be attained. To these works the attention ought to be particularly directed, that a knowledge may be acquired of the just employment, proper destination, verisimility, suitableness, and utility of each part. By this means the original type will become an inflexible rule, that will redress all the vicious customs and digressions, which a successive imitation of the works of art never fails to introduce, and give to the artist a power of regenerating architecture, and of correcting those sudden changes and revolutions of taste of which this art is always susceptible. This precious relic of antiquity, like the mirror of truth, exhibits to our notice the origin of the art, and by exposing the corruptions which have so long deformed it, reclaims it to its primitive purity.

The architect who makes it the rule of his studies will find, that in architecture beauty cannot exist without utility; that whatever cannot be justified at the tribunal of necessity ought to be retrenched as superfluous; that columns ought never to be employed in representation; that all useless decoration is vicious; that the desire of procuring large openings forms but a poor apology for the coupling of columns, or the proscribing of piers in a peri-

style; and that in all places where the column cannot retain the function which it filled in the wood cabin, it ought to be banished. These and the following maxims will be found therein engraved:

1. The column being destined to support the weight of the edifice, ought to be exactly perpendicular, because that position constitutes its greatest strength.

2. It ought to be insulated, to express more naturally its origin and destination.

3. It ought to be round, in conformity to its natural prototype.

4. It ought to diminish from its base to its capital, following nature which has given that form to the trunks of trees.

5. And it ought to be placed direct upon its foundation, as were those of the rustic cabin.

An architect, well convinced of the origin, employment, and destination of a pediment, will know that in representing the gable of a roof, it ought always to be on the width of a building; that its form is essentially triangular; and that its proper situation is over the entablature. He will reject the futile authority of those who have inscribed two pediments, one in the other, or those who, conserving the inclined parts of the triangle, have suppressed the horizontal entablature which forms the base. He will avoid that which Serlio prohibits, namely, the placing of denticules and

modillons in the same entablature, as being a ridiculous pleonasm.

Architecture being thus brought back to its origin would evidently contract more simplicity, and arrive at that greatness which is found amongst the ancients, with whom the art had not as yet lost the tradition of its true principles. It would then be discovered, that it is absurd to bend the inflexible forms of an architrave to the caprice of an irregular plan. The absurdity would be perceived of announcing, by three orders of columns, a building, the essence of which consists in being composed of but one story. It would, on the contrary, be seen, that a temple ought to have but one and the same order, interior and exterior; that it is necessary that the intercolumnations be equal; that the nearer they are to each other, and the more effect they will produce; that engaged columns and pilasters are a toleration in architecture that ought not to be abused. The modification of the severity of these laws, however, under certain circumstances, must be committed to the direction of an enlightened taste, aided by the examples of the ancients. Hence custom has authorized some exceptions which it would be too rigid to condemn: such are pediments or entablatures placed in the interiors, &c. They are deviations from the severity of rules which are licensed by taste, from which nothing

definite ought to be concluded, nor any certain analogies drawn; but care ought to be taken not to give the authority of a rule, nor to establish as a principle, that which constitutes merely an exception.

In retracing thus the history of architecture to that point of which we have just been speaking, we have discovered only the crude types which constitute as it were the skeleton of the art. The concurrence of other arts, more direct imitators of nature, was necessary to bring architecture from the point where it would have rested without them, to that degree of perfection in which it was found among the ancients. Before this necessary junction with the arts, architecture resembled the celebrated statue of Prometheus, that waited only for the torch of Minerva to communicate to it movement and life. It was from this union that it received animation, and was made to participate in those riches which the arts had derived from their common imitation of nature. In the appropriation, however, of these riches, and the choice and comparison of these new models, of which architecture previous to that time was entirely ignorant, considerable knowledge and judgment was required. Restrained to the forms commanded by necessity, it followed only the rude proportions that its limited knowledge enabled it to perceive. It could not, however, rest at this point amongst

the Greeks, as it has done with many nations where it is yet in its infancy. Greece, fertile in genius, could not be an unfruitful soil for any art. Blessed with a mild and beautiful climate, and enjoying political and civil institutions the most favourable to genius, sculpture was marching at a slow but sure pace, having followed a route until then unknown. Raising itself by degrees from the most shapeless signs to the principal dimensions in the termes, from the termes or hermes to the figures called dedales, it at length attained a tolerably accurate knowledge of the true proportions of the body of man, in the imitation of which architecture discovered, if not a fresh model, at least a new analogy of imitation. In the application of this system of natural proportions and relations, a similitude of principles was discovered, by the appropriation of which the art became more immediately the adopted of nature, and enlarged its capabilities of effective design.

In the formation and imitation of types, architecture knew only the simple dimensions of necessity. In its progress towards perfection, a model of proportions applicable and conformable to its first disposition became necessary, which, without contradicting the spirit of its original, would embellish the form. The application of human proportions was eminently calculated to answer this purpose: it afforded such means of perfecting

the first essays of the sketch, that one is almost tempted to regard the excellence which followed as the result of previous computation and reflection, rather than the concurrence of successive and unforeseen causes. Nevertheless, experience proves that the principal inventions of man are the result of a fortunate application of fortuitous discoveries. To this imperceptible conjunction of causes, which were beyond the reach of human foresight, and which determined, in a measure, the destiny of the arts, architecture was subordinated more than any other art. In adverting, however, to the commencement of the arts amongst the Greeks, it may be remarked of them generally, that they contained in themselves the seeds of perfection; nor is it easy to discover any cause that could have operated to prevent them from arriving at maturity. The rude representations of Thespis were preludes to the master-pieces of Sophocles; and the architecture of Greece, unlike that of modern nations, which received from the Gothic a vitious principle, advanced from its origin unmarked by vacillation, and without retrograding in that course which naturally led to perfection.

Architecture, constituted and founded upon the types of carpentry, offered to the art of imitation a fertile field, which required but more favourable circumstances, and a more fortunate cultivation.

The art of proportions ought to perfect the work. The ancients were sensible that the forms of the carpentry could be improved by bringing them to points of comparison of another kind. Estimating the form of man as the most perfect in nature, they perceived that in imitating the plan, disposition, conformity, and the means that nature has employed in its most perfect work, the art would, in some measure, become its rival. Believing they had discovered the secret by which nature pleases, and from whence she derives her beauty, they conceived that an edifice disposed after the same spirit and principle that nature itself has followed, would be alike beautiful, and please by the same reasons. From thence an edifice was regarded as a form which ought to have its members, divisions, and parts subordinate to the total. Observing that nature has disposed the form of man in such a manner, that there exists a necessary correlativeness from the smallest part of his body to the whole, they would not from that time admit in architecture any thing which could not, as in nature, be justified by a necessary employment, or was dependent on the general order.

It was on this plan that all the forms invented by necessity were put in order, and consecrated by the imitation of types, the employment of which had not as yet found a basis in reason and enlightened sentiment. Hence that happy division

into three parts, that ternary distinction, which may be remarked in the form of the cabin, was afterwards founded upon nature itself, in the works of which this same division is generally adopted. Architecture, says M. D'Hencarville, is composed of three parts ; the column, entablature, and pediment, to which a basement has since been added. Each of these three parts are subdivided into three others. The reason of this division is, that it contains the greatest number of proportions that the eye of man can embrace at once, and observe with attention, without being fatigued.

Nature has given to sculpture a determined measure of relations, a scale of proportions of the human form which, whether it be taken from the foot or the head, will serve as a module to the whole figure : it rules the slightest shades of proportions in establishing a constant accord of the parts, independent of the variety of the models, and the errors of the sight. Architecture also has created for itself a scale of proportions of a similar nature, which in the Doric was the triglyph, and in the other orders the diameter of the column. From that time an edifice became a kind of organized object, subordinate to constant laws, in which it found the principle and reason. It made a code of proportions which assigned to each part its measure and ratio, according to the design of the total; connecting in such a manner the whole

to the part, and the part to the whole, that it placed them in a reciprocal dependance, and secured to them an inviolable accord. The study of the human form being investigated in all its varieties, caused sculpture to perceive the differences of age and nature which form the diverse manners that Polycletus has described in his treatise of symmetry, and of which the antique statues have conserved to us the visible rules. Architecture has formed for itself a similar expression of character in the invention of the orders, which are reduced to these three: the one expresses force, the other grace, and by the union of these two qualities the third exhibits the expression of nobleness and majesty.

Such was the progressive advance of architecture. It was in assimilating itself to another model that it succeeded in producing one much more perfect than the first. It is useless to remark that it never traces materially upon the model of the human form, but only makes an intellectual copy. The imitation is not positive, but figurative. It is not the form that architecture appropriates, but the proportions and principles that are contained therein. When Vitruvius tells us that the Doric order was made in imitation of the body of man, and the Ionic to that of woman, it must be understood that this was an imitation of analogy, and not of resemblance. Hence he gives us to

understand, that in one was imitated the neglected and naked simplicity of the body of man, and in the other the delicacy and ornaments of that of woman. But when he endeavours to establish a similitude between the column without base and the naked foot of man; between the ornamented base of the Ionic, and the elegant sandals of women; between the folds of their dress, the ringlets of their hair, and bracelets, and the Ionic volutes and flutings, the comparison is pursued too far. It becomes an abuse of analogy that banishes reason, or at most an ingenious allegory, intended to disguise truth, but which tends rather to alter and render it unnatural. Others, reversing this order of imitation, have pretended to see in the capital of a column the head of a man, and his body in the shaft, and have attempted, by a factitious and absurd interpretation, to prove the truth of their hypothesis. In seeking to prove too much, however, the most important truths are sometimes rendered ridiculous; and from the attempts to reconcile the absurdities above-mentioned, one may judge of the consequences of indulging in a system of false and puerile inductions. More is lost by defending truth badly, than by silence.

It is evident that man, in seeking a model of proportions to apply to the rude delineations of carpentry, could not possibly have found one more sensible, or more within his power, more

analogous or happy than the human form. This analogy is so natural, that in praising the human figure, it is generally compared to a well-disposed edifice; and architecture pleases the sight in proportion to the greater or less degree of approximation which it has made to the principles and proportions of nature. Vitruvius plainly tells us, that a building cannot be well disposed, if it has not this proportion and relation of all the parts with regard to each other which are found in those of a well-formed man. Non potest ædes ulla fine symmetria atque proportione rationem habere compositionis, nisi uti ad hominis bene figurati membrorum habuerit exactam rationem.

It was in this living book of proportions, which the artists of Greece always kept in view, that the architects formed those happy combinations, just application of means, and delicate shades of character, with which they enriched architecture; and by these means this art, which is apparently so little susceptible of fixed principles, became, nevertheless, not only the creator of its own laws, but also gave them to the other arts, of which it rendered itself the moderator. The possibility, however, that these principles and laws of proportion, which were intended only to prevent the excesses of the imagination, might become a chain to the art, by a too slavish adherence to them, was early perceived by the Greeks. They were sensible,

that if an exclusive authority were given to them in all cases without bounds, the art would languish in fetters which it had forged for itself. The merit of discerning the degree of liberty that was allowable to architecture, and of giving it that happy constitution, which is equally distant from the license of Asia, and the despotism of Egypt, is undoubtedly due to the Greeks. But this judicious medium must have been the fruit of the fortunate concurrence of the best moral and physical causes; and the perfection of the art must have depended on that of the nation which invented it.

It has been shown that architecture, depending only on a system voluntarily established, and exercising an imitation in some degree metaphorical, might have found itself subjected to laws which would have been more tyrannical from the circumstance of their being arbitrary. But it may be observed, in addition to what has been previously remarked, that as nature exhibits occasional exceptions to her general laws, it is understood that the rules drawn from her temple, and applied to art, may be equally modified in their details. It should also be remarked, that the proportions of the human form, although fixed and unchangeable, in the nature of their existence are subjected to much variation in the different members of the species; and sculpture, in its most perfect imitation, was itself governed by these variations. It

was much more congenial to the genius of architecture to follow the spirit of nature, than to subject itself to a servitude, the effects of which would have been peculiarly detrimental to the art. Hence it may be seen that the rules of modinature and relative proportions ought to be subordinated to the maxims of a superior order; and instead of being the governing principles, they should always be subjected to the order which they are intended to embellish. By constantly referring to nature in their endeavours to enrich the capabilities of architecture, the ancients discovered some of the means whereby the former affects man with sensations of delight, and which they sought to appropriate to the latter. Until then they had perceived only a slight intimation of the resources of architecture, but now they distinctly saw, and comprehended them to their full extent, and their principal object of research became a correct knowledge of that which affects the mind most agreeably by the interposition of the sense of sight. In their endeavours to attain this desirable end, they perceived that, notwithstanding the intimate connection which exists between the mind and the senses, each of them are nevertheless independently susceptible of pleasure; that the pleasure of sight is peculiar to the eye, and results from certain impressions dependent on the relations which nature has placed between the object and the organ. From the

knowledge of these principles two distinct studies became necessary to perfect the art. The one was that of optics, or the science of vision in general, which accounts for the modifications of the rays of light in their passage through the eye, explains the causes of distinct and confused vision, and the effect which distance and height has upon different objects. The second was that of harmony, named eurithmy by the Greeks. The art of harmony consists in a general knowledge of the laws of nature, their purposes, the means by which they attain their ends, and the relative effects of disposition, form, and proportion.

By generalizing more and more the idea of its model, architecture extended its sphere of imitation. It was no longer exclusively indebted to the cabin from which it sprung, nor to the form of man from which it modelled itself, but to the entire area of nature, which had become the type of its imitation, and its directing genius. The happy form which it drew, from the imitation of the carpentry, constituted, in a manner, the placing of the bones of the art; the analogical imitation of the human form, by the study and application of its proportions, furnished this skeleton with that just relation of the parts which was essential to its harmony. The general appropriation of the principles of order and harmony which exist in nature, and from which the mind derives its ideas of

beauty and greatness of design, became the animating principle, by the exercise of which was formed an art no longer the mere copier or imitator of nature, but its rival.

It is evident that architecture, which is apparently more subjected to matter than the other two arts, is in reality more ideal, intellectual, and metaphysical, than either of them. We have seen that nature furnishes it only with analogies. It rather compares itself to its model, than imitates it; it does not follow after, but goes by its side; and whilst it does not materially copy the forms with which it is conversant, it appropriates the harmony and general effect which they exhibit. Studying the cause by which that harmony and general effect are produced, architecture assumes an originality even in its imitation, and becomes the competitor of nature, whose laws of proportion, of harmony, and of effects, are interwoven with the study of its progress, its genius, and its means. The other arts are presented with models which they imitate or rectify: architecture created its own. The order of nature was the fertile field of its active researches, and from the almost infinite variety of form and design which are manifest in its spacious area, it has deduced its principles of order and arrangement, by the fortunate application of which it has conferred upon man the blessing of a secure retreat from the inclemencies

of the weather, combining comfort and convenience with ornament and taste; and has given to nations their temples, their asylums, and their palaces.

If then architecture is an imitative art, it is not from its having embellished the rude forms that necessity had dictated in the dwellings of the earliest race of man; but it is because in prescribing laws to itself it studied the sublime code of nature, and modelled its own in the spirit of that of its great prototype.

The rules which architecture has given itself rest consequently on a double basis; that of the positive imitation of types, and that of the ideal imitation of nature: the one submitted to a method, and the other superior to all calculation. The first, nevertheless, has never been positively followed by the ancients; and perhaps there cannot be found two antique edifices where the proportions of the same order are precisely similar. This circumstance, said M. D'Hencarville, is agreeable to the ideas of the ancients, according to whom the edifices were not made for the orders, but the orders for the edifices; and it appears consistent that they should be subjected to the particular character that each fabric was intended to express. Thus if some of the antique monuments, which have escaped the ravages of time, were judged after those rules which we believe to be derived from them, those pieces of architecture would

very often be considered only as exceptions, the real beauty of which might be very great: it is because we are not aware that it is not by our little rules that those sublime productions must be judged; but, on the contrary, it is our rules which should be examined by those which have been followed, to produce such examples of perfection. To construct according to rules requires nothing but memory and practice; but to execute after those great maxims, to invent after those principles of imitation, and to draw from them all the resources which they can possibly furnish us, requires genius. The number of those who, following these precepts and examples, studied to make themselves worthy of the title of architect, was much greater amongst the ancients than the moderns. The latter can certainly number more who profess to be masters of the art, but who produce infinitely less good architecture than the former.

THE CHRONOLOGY OF ARCHITECTURE.

IT is impossible to fix the precise epoch of the invention of architecture in Greece. The developments of genius, in the improvement of the arts, being sometimes very slow, and at others very rapid, are not of a nature to be subordinate to any date. An art is the result of the knowledge acquired of certain objects; and the acquisition of much knowledge is the fruit of the time and labour of many men. It does not appear that architecture, at the time of Homer, had been submitted to any determined principles or proportions. The descriptions of this poet do not announce the employment of the orders at this period: the edifices appeared more remarkable for the price of the materials than their forms. The choice and polish of their stones were their greatest merit; and the palace of Alcinous depended more on this for its effect, than on any fine proportions of which it could boast.

The Doric order, which was doubtless the most ancient, does not indicate any epoch more certain. The circumstance of its name is insufficient to prove that the invention was due to Dorus, son of

Helena, King of Achaia and Peloponesus. Perhaps it received his name by having been employed in the famous temple which this prince (according to Vitruvius) had built in Argos, in honour of Juno. It might have originated amongst the Dorians, with whom it appeared that this manner of building was held in great reputation, before it had spread itself over the rest of Greece. However, it is true that the most ancient of their edifices, or those at least which exhibit the most striking marks of antiquity, are of this order, the invention of which must have preceded that of the others. (See Doric order.) Notwithstanding our ignorance as to the dates of the ancient monuments, there have not been wanting persons who, without the least foundation, have attempted to fix the epoch of their erection.

It is certain that, in the century of Alexander the Great, the three orders which constitute architecture had received, to a great degree, the perfection of which they were susceptible. Moral and physical causes combined to bring the art to this point. Liberty, love of their country, and the desire of renown, had rendered Athens the common centre of the arts and sciences. The defeat of the Persians at Marathon, and other famous victories, had procured peace to all Greece. The space of time which preceded the Peloponnesian war witnessed a general developement of

talent: it was at this epoch, observes Diodorus of Sicily, that sculpture was carried to its highest point by the chisel of Phidias. Philosophy, eloquence, the art of war, in fine, all the arts and sciences, were seen at once disputing for pre-eminence with each other. It was then that they commenced to rebuild the temples and edifices that the Persians had thrown down, and the ruins of which had been preserved by the wisdom of the state, in order that this spectacle of misfortune and desolation might furnish an eloquent lesson to the Greeks of the perils which always menaced them. It was not in effect until after the flight of the general of Xerxes, and the victory of Themistocles, that this general restoration of the monuments, and the re-construction of Athens was begun, the interior of which was embellished with edifices which must have appeared like as many trophies of the victory of Salamis. Such was the epoch of the most grand and beautiful style of architecture. If the monuments of this age are compared with the statues of the same time, it will be seen that there reigned the same character of grandeur and energy; that courage and stateliness, which the circumstances of the times could not fail to imprint on all the works of art: for the arts, being the works of man, are always the true representatives of his state. The edifices of the Doric order that were then raised breathed this

air of heroism and manly energy, the cause of which is seen in the political position of Greece. This order, the ages of which are calculated by the degree of strength and weight which it presents in the different monuments, appears to have received at Athens, near the time just mentioned, the state approaching to perfection, and the medium between the two excesses.

The Ionic order (to judge from a monument in this city,) had also attained nearly all the grace and delicacy of which it is susceptible. The Grecian architecture passing into Asia Minor, contracted that showy and flimsy taste which characterizes this country. In this voluptuous climate it lost a part of its force; and the supposed elegance which it acquired was at the price and the sacrifice of several attributes of solidity. The rounding of the volute was substituted by the vigorous incroachments of the abacus and ovolo cut in oves and darts. The columns of the temple of Ephesus are covered with ornaments in relief; and the sculpture insensibly softened the manly stateliness of the construction. (See Ionic order.) Whether the perfection of this order is due to the Ionians or to other nations is of little consequence; it is certain that, in the temple of Minerva Polius, the construction of which was referred by M. Le Roy to the time before-mentioned, this order had

acquired great beauty, lightness, and exquisite taste of ornament.

Callimachus had already preceded the age just spoken of; and consequently the Corinthian capital required nothing from the genius of the following centuries for its decoration, as experience has proved. In substituting for the olive and laurel leaves, or the nymphæ of Egypt, the acanthus plant, Callimachus seems to have imposed on all ages the necessity of imitating this beautiful distribution, the idea of which was fortuitously suggested to him. (See Corinthian order.) Nevertheless, there remains few monuments really Greek, of the Corinthian order, which can be retraced to the time of Alexander, and which are worthy of being imitated. Perhaps the edifices of this order, being more sumptuous and magnificent in point of materials, might have excited the cupidity of the Romans to carry off the columns and capitals to Rome.

When architecture, with the other arts of Greece, was transported to Etruria by the Pelasgi, it appears, according to the most general opinion, that the Doric order reigned alone in Greece: at least it is the only one that the Etrurians have employed amongst themselves. This order lost in this its transmigration many of its original forms, and changed many of its natural characters. They

stript it of its triglyphs; gave to it a base; and rendered its proportions unnatural. It was under the name of Tuscan order that the Romans, who borrowed from the Etrurians their first architecture, received the Doric order, which the moderns have since sought, by false distinctions, to constitute a different order from that of the Etrurians. (See Tuscan order.)

If the monuments of history, and the remains of many very authentic edifices in Etruria are consulted, it will be seen that the art of building developed itself in that country under the greatest and noblest of forms. But if the analogy of the other arts with architecture be interrogated, the latter appears to have rested in the same state which it was in Greece before its transplantation, and had not acquired those precious shades of expression which constitute the essence of architecture in the three orders. If, however, in its origin, the architecture of Etruria confounded itself with the art of the Greeks, in the decadence of this nation it mixed with the taste of the Romans.

The first works of the Romans are due to the Etrurians: it was to them that Tarquininus confided the construction of the famous sewer, an immense work, in which has since been seen an assured presage of the grandeur towards which architecture marched from its first steps, and with the whole extent of which it appeared, even then,

quite conversant. The simple taste and little-ornamented constructions of the Tuscans were suitable to the rudeness and austerity of a poor and warlike republic. The art of architecture was for a long time unknown or neglected among them; and the temples of the deities and the palaces of the great were for a length of time covered with thatch and white clay. The marbles could not have appeared but with the chains of servitude: Augustus introduced them. The riches of the universe had already bent the mind of man to the yoke of luxury, and Rome, in chaining the arts to its triumphal car, did not perceive the slavery which marched after them.

Augustus knew that the pleasures of the arts could alone indemnify the loss of liberty; and he employed all his power to make them flourish. He boasted of having transformed Rome into marble which he found composed of clay. Titus Livius calls him the author and restorer of the temples. The encouragement given by this monarch caused all the great masters of Greece to come to this new capital of the arts: it was under his reign that architecture arrived at the highest degree that it could attain at Rome; and it is found in the book of Vitruvius reduced to rules and principles. The Pantheon, the finest monument that remains of Roman magnificence, was built by Agrippa, son-in-law of Augustus, who prided himself in em-

bellishing Rome with an innumerable quantity of superb edifices. He introduced the thermæ, and caused a great number of fountains, temples, &c. to be constructed.

The passion for these grand monuments again augmented under the successor of Augustus. Nevertheless, under Tiberius, Caligula, and Claudius, the taste had already degenerated. Nero showed less love for the arts than cupidity. What can be thought of the taste of a prince who ordered the statue of Alexander to be gilt; and who mutilated the finest statues to substitute his own resemblance? He caused himself to be represented in colossi of all kinds, announcing a disposition towards vice and every kind of excess. He was governed by the same spirit of exaggeration in the edifices which were constructed by his orders. He exhausted his wealth in all kinds of prodigalities, seeking to leave, by his proud magnificence, monuments of his expense rather than of his taste. Nevertheless, his reign was one of the most favourable to the grand enterprizes of architecture. Severus and Celer constructed for him the palace called the Golden Mansion, the richness and brilliance of which has never been equalled: all the pomp of decoration was exhausted in its construction; and, in the midst of so much grandeur, all that could be despised was the possessor.

Under the happy reign of Trajan, architecture

resumed the sageness and grandeur of correct taste, a circumstance principally owing to the character of this great emperor. The triumphal arches, the column, and forum, built by this prince, attest by their great splendour the degree of superiority to which this art had risen under his patronage. The architect, Apollodorus, had the greatest share in designing the edifices which immortalize the memory of Trajan. It was this architect who superintended the erection of the famous Column, at present subsisting, the master-work of this age, and perhaps of the Roman empire.

Adrian and Antoninus favoured architecture: the first exercised it himself. Marcus Aurelius learnt to draw from the painter Diognetus. Antoninus Pius built the Lanuvium, a villa or country seat, after the antique; the remains of which proves, even at the present day, its grandeur and magnificence. Some idea may be formed of it from a silver tap, by which the water was conveyed into the baths, and which was found among the ruins: it weighed forty pounds. Nevertheless, as Winckelmann observes, the art was then approaching to its decline; the splendour which it threw around it at this epoch resembles the bright glimmer of a lamp before it dies away. Under the emperors which followed, it was seen to decline and disappear. Greece found itself stript of those privileges

which it had previously enjoyed. Already the Greeks had forgotten their own language, and there were few amongst them who could read and understand the best writings of the ancients.

The arch of Septimus Severus made one of the remarkable epochs of the commencement of the decadency. It is difficult to conceive how sculpture could have fallen to such a degree, so soon after the time of Marcus Aurelius. The arch, vulgarly called the goldsmith's, presents nothing of the character and form of good architecture. The profiles are imperfect; and the ornaments cover and overcharge the members.

The love of Alexander Severus for the arts supported architecture again for some time; but he could not prevent it from sinking under the fall of the western empire. It is to the reign of Gallienus, however, that the date of the total annihilation of the arts is generally fixed. The arch of this prince proves to us the disgraceful state to which they were then reduced. Nevertheless, the genius of architecture was not entirely extinct; at least it appeared to have survived the universal ruin of the other arts. In an age when there was not a statuary existing, Dioclesian, in his Thermæ, displayed a greatness which, whilst surveying the prodigious remains that have descended to us, compels our admiration even at the present day. But historians have transmitted to us a proof of

the bad taste that reigned in this edifice. The entablatures, ceilings, and architraves were overcharged with ornaments to such a degree, that, in the public amusements which the emperor gave there, a great number of the ornaments broke off and fell, causing the death of many of those who were assembled. The immensity of Diocle-sian's palace at Spalatro proves to us what efforts architecture was then capable of. It is nearly to the same epoch, or to the time of Aurelian, that the vast constructions of Palmyra and Balbeck, in Cœlosyria, are ascribed. Notwithstanding the imperfections of taste, and the viciousness of the details, one cannot help being astonished at the grandeur of the plans, the boldness of the enterprize, and the riches which have been employed in the erection of these great works.

It might be asked why architecture, deprived of the aid of the other arts, supported itself alone, and for such a length of time, without them? Why, after having been raised with and by them, it did not immediately follow them in their fall? There may be more than one reason assigned for this circumstance. Inseparably connected with the prosperity and comfort of man in civilized countries, and retaining a hold upon the public mind in the erection of temples, &c. architecture survived, though not without injury, the operation of those political causes which gave rise to the de-

struction of the statues, the effacing of the images, and the conversion of the bronze and metal statues of the deities into money. Statues were no longer required; but it was still necessary to erect edifices, and the ancient temples were stripped of their ornaments and columns to embellish the edifices devoted to the new form of worship. To necessity, therefore, architecture is principally indebted for its preservation, whilst sculpture, witnessing the destruction of its finest forms, drooped its head, and, together with its kindred art, painting, (which received but little encouragement amid the prevalence of such a depraved taste,) sunk into disrepute and temporary oblivion. Such were the principal causes of this inequality in the duration of these arts. But a common destiny soon afterwards overwhelmed them. The translation of the seat of the empire to Byzantium, in dividing the riches of the arts and forces of the state, conveyed a mortal stroke to the one and the other. Vainly did Constantine endeavour to raise that new metropolis to the glory of Rome, which he had stripped. All the efforts that he made to embellish it with more sumptuous edifices, proves that the arts are not always subservient to the power of kings.

Italy being abandoned to the fury of the Visi-Goths, they destroyed all that Constantine had

left. A general ruin interred in the dust the monuments which were the pride of Rome. All the edifices afterwards constructed were of the precious remains that ignorance and avarice gathered from all parts. A disgraceful forgetfulness of the proportions, forms, suitableness, and destination of these fragments, occasioned a confusion in all the members of architecture, and completed, by this medley, the unnatural perversion of its principles. The columns were collected and employed as pillars, upon which were confusedly extended the different entablatures, placed at hazard. Arcades were formed, supported by columns, which from their inability to construct platbands were to supply their place. Architecture also lost the division which constitutes its nature; and it was abandoned from abuse to abuse, until the idea and remembrance of its types were almost forgotten. There was no longer any remedy: it fell into a real chaos, and from the total ruin arose that which is named Gothic taste, the constructions of which do not belong to the history of architecture.

At this period a kind of interregnum commences in the history of the art. Like to those rivers that disappear for a time, concealed under ground, and which burst forth afresh to take a more expanded course, the art of architecture, hidden during the centuries of ignorance, again appeared,

in order to give law to the nations themselves who had annihilated it, and to extend its empire over all Europe.

In the midst of the darkness with which ignorance had for many ages covered the finest countries of the earth, some rays of light discover to us that the ancient taste for architecture was not entirely lost. The passion for great and vast enterprises was not altogether extinguished in Italy. The attentive observer, in travelling through those countries, (with whose records the history of the arts is immediately connected,) will perceive, in different situations, the scattered monuments of architectural genius, which serve as guide-posts to direct the historic traveller, and in some measure to fill up this lamentable void in the history of architecture.

In the fourth century the Christians abandoned their retreats in the catacombs, and raised themselves basilics, or spacious edifices divided into three naves by two ranges of insulated columns, and terminated at the extremity by a semicircle. There soon appeared in Rome St. Giovanni Laterano, St. Pietro, St. Croce in Gerusalemme, St. Lorenzo, and St. Agnese, which were the basilics erected under Constantine; St. Maria Maggiore and St. Vitale, under Constanzo; St. Paolo, under Theodosio; St. Sabina, St. Pietro in Carcere, and St. Giovanni e Paolo, under Valentiniano. In the

sixth and seventh centuries the church of St. Sofia, at Constantinople, was erected by Giustiniano, and forms the principal production of this kind that exists in the empire, and likewise the only one which it ever possessed.

The tenth and eleventh centuries witnessed in the church of St. Mark, at Venice, the dawn of that day which afterwards appeared.

Some improvement in taste began to manifest itself in the different cities of Italy: in 1013 were laid the foundations of the temple of St. Miniati. But the principal monument of this century was the cathedral of Pisa, built in the year 1016 by Buschetto, of Dulichium, a Grecian architect.

In the twelfth century a high tower was erected adjoining to the cathedral of Pisa, to serve it as a belfry. This tower is well known by the singularity of its inclination, which is owing to the insufficiency of its foundations. In its construction little progress can be discovered to have been made in architecture.

In the thirteenth century, Lapo, a Florentine architect, built in Tuscany the church of Assisi; and Fuccio, another Florentine artist, constructed at Naples the castle of Uovo. Niccola of Pisa, of the same country, and in the same age, erected at Bologna, Padua, and Venice, many esteemed edifices. The belfry of the Augustines, in the first of these three cities, offers interesting details. His

greatest enterprise was the church at Padua, dedicated to the patron of this city: it is less remarkable for its architecture than for its sculpture in basso-relievo, the greater part of which is from the hand of this architect. Nevertheless, the church of the Trinity, at Florence, was that which of all his productions was most esteemed by Michael Angelo, who was one of the greatest admirers of the talents of this artist. Architecture had not as yet entirely emancipated itself from the chains of barbarism and ignorance. Arnolpho di Lapo built the church of St. Croce, and gave designs for the costly temple of Santa Maria del Fiore. There still remained great efforts to be made before they could approach in the slightest degree to the taste, simplicity, and beauty of the antique architecture. At this time a strong emulation seemed at once to animate all the cities of Italy: the church of Santa Maria Formosa was constructed at Venice, by Paolo Barbetta, some part of which is in the antique taste; several edifices were erected at Bologna; and the admired chapel of marble in the church of St. Maria Maggiore, at Rome, was built about the year 1216, by Marchione, architect and sculptor. The whole of this epoch indicates an animated combination of talent and energy to raise architecture from the abyss into which it had fallen.

But these indications of reviving taste did not

extend beyond the borders of Italy. In all the spacious constructions which were raised at this time in the rest of Europe, we only behold an excessive passion for that which was strange and marvellous, and a confusion of ornaments, without choice, rule, or taste; amongst which class may be placed the cathedral of Strasburg, a production of the thirteenth or fourteenth century, and one of the greatest edifices which at that time had been undertaken. It was constructed by Erwin, of Steinbach. The total presents a strange union of extended, and at the same time trivial and ridiculous ideas.

In the fourteenth century Charles V. continued the erection of the Louvre, which was commenced by Philippe Auguste; and then he undertook the palace of St. Germain-en-Laye, which the English augmented and embellished under the reign of Charles VI. In the same century also, William Wykeham, an Englishman, presented to king Edward III. designs for the construction of Windsor castle. He erected several edifices in the city of Oxford, besides a cathedral at Winchester. At this time Giovanni, of Pisa, in Tuscany, constructed in this city the Campo Santo, in which, although of so late a date, the Gothic taste prevailed.

The basilical form of the primitive churches is very advantageous. We discover their total at the

Rienzo; but which is, in fact, neither that of the one nor the other. Upon one of its faces is an inscription in verse which explains the whole. The poetry perfectly corresponds with the sublime architecture and pure taste of the eleventh century: it says that this marvellous palace was erected by Nicola, son of Crescenzo, first duke of Rome, and of Feodora. It is a heap of fragments of all kinds of sculpture. The platbands, modillons, and consoles, are covered with it; the columns and their capitals, which are of brick, together with different members of the cornices, are all decorated with the saw-tooth ornaments. Besides these favourite embellishments they imagined other pretty things, which passed at this time for the efforts of the most refined taste; such as the fringe which ornaments the exterior wall of the choir of St. Giovanni Laterano, those of the church of Aracœli, near the Campidoglio. In one part there is a single and in another a double range of small arches upon consoles, from which a species of tufts descend.

From this brief sketch it must appear evident, that from the fourth to the fifteenth century the architecture of Christian Rome, as well as that of other cities and countries, will bear no comparison with that of profane Rome, nor indeed can they be said to have possessed any architecture. In modern Rome necessity caused them to employ

the columns of the antique edifices: but in what manner did they employ them? Beautiful as they were, they rendered them disagreeable; and even at Rome, in the midst of chefs-d'œuvre, the rules of propriety and taste seemed no longer to exist. This destruction of taste extended to all the arts and all the sciences: painting, sculpture, poetry, and eloquence, all the operations of the human understanding, suffered the same fate as architecture. The arts spring, improve, arrive at perfection, change, decline, are destroyed, and flourish again, from the same causes which produce the revolutions of cities, of nations, and of empires.

We now approach to the revival of architecture, and of all the other arts, of which the fifteenth century was the epoch. The cities that were desolated by the troubles which had agitated Europe re-established it with emulation. The tranquillity which followed permitted the undertaking of numerous constructions. The monuments of antiquity were remembered, and Brunelleschi appeared. Brunelleschi, one of the greatest men of whom modern architecture can boast, was the first who, with the scale and compasses in hand, surveyed the ruins of ancient Rome. After having exercised his talent in different arts, and formed his mind and taste by the study of the ancient authors, he undertook to revive the maxims of the antique

architecture, and to draw them from the ruins in which time and barbarism appeared to have buried them for ever. He discovered and distinguished the orders; and was the first who, after having found their valuable laws, employed their just applications in his works. He knew how to apply theory in practice. The profound study that he made of the monuments of antiquity conducted him to the true principles of construction, without which architecture can erect nothing great, or worthy the nobleness of the art.

The great edifice commenced at Florence by Arnolpho, in part according to the Gothic taste, and the cupola that he projected, was as yet a problem, the solution of which was reserved for Brunelleschi. The elevation of genius had produced the plan; but the little knowledge of the resources of the art had until that time prevented the execution of this design. Timidity of mind had placed it amongst the class of chimeras, or of those fictions which might embellish romance, and the recitals of poets, but which might never be expected to be seen realized. Nevertheless, Brunelleschi succeeded in executing it with a facility which deprived, almost in a moment, the boldest enterprises of the merit and difficulty which hitherto had been attached to them, and which the unlearned, above all, would no longer acknowledge. The natural disposition of ignorance and inability is to believe

that impracticable which they cannot perform, and afterwards to cease to regard that as astonishing which no longer appears to them impossible. Be this as it may, the cupola of St. Maria de Fiori opened the way to all the vast enterprises of modern architecture; and this monument, which caused the admiration of Michael Angelo, will always astonish those who know how to appreciate the merits of the inventors, and the difficulty attached to the first steps in every undertaking. This edifice, and several others with which Brunelleschi was charged, gained him as much reputation as an architect as they did honour to architure. The students educated in his school spread themselves in the different parts of Italy, awakened a taste for architecture, and at the same time, propagating its true principles, inflamed the ambition of sovereigns. There shortly afterwards appeared, and as if in concert, the beneficent genii of the house of Medicis, the dukes of Milan, and other princes and Italian nobles, who opening their palaces and treasuries to literature, cherished the arts, and seemed to be animated by a common desire to raise them from the oblivion into which they had sunk. Soon afterwards cardinal Bessarion and other Greeks arrived, and communicated the books of Vitruvius to the learned architects of Italy, who consulted them, and spread the doctrine of this author amongst the public,

being the only one of the ancients whose writings upon architecture have descended to us.

Leon Battista Alberti, of the ancient and illustrious family of Alberti, at Florence, the second of the artists who constructed according to the principles of Vitruvius and the maxims of antiquity, contributed greatly at this time to the perfection of architecture. He succeeded Brunelleschi, whose talents he emulated, and endeavoured to give to architecture more elegance, grace, and variety in ornaments, than his predecessor. His literary works upon architecture announce great erudition, an extended knowledge in construction, and a profound study of the works of the ancients. His book, the only one which the moderns can oppose to that of Vitruvius, perhaps tended more to correct the taste of his country than that of Vitruvius himself, whose numberless obscurities cannot be dissipated even by experience and learned dissertation.

It will be very difficult at the present time to follow, by any formal indication of the monuments, the abridged history of the taste and disposition of the palaces in this night of the arts, which is named the middle ages, without having recourse to ideas of the Gothic species, and to castles or fortified mansions, of which there scarcely remains either the fragments or confused traditions. It is therefore necessary to pass over a great number

of centuries in the history of architecture as connected with Italy, before we arrive at the epoch of erecting the ducal palace of Venice, the taste of which totally differs from that of the fortified seats constructed in England and France in the reign of the feodal governments. Italy was not governed at this time by the same system as the rest of Europe; feodality there was not so deeply rooted, and did not extend itself under the same forms. This country was not seen covered with castles, the lords of which, being in war with their neighbours and sovereigns, inhabited bastions surrounded with moats and draw-bridges, instead of palaces, and occupied themselves but little about the interior or exterior beauty of their habitations. It appears certain that in Italy the taste of the antique architecture was never entirely extinct; at least some traces of it may be found in the edifices of all ages. Too many models of it were preserved for the Gothic species to be able to efface its remembrance, and the period of its re-animation may be dated from the twelfth to the thirteenth centuries. The fourteenth and fifteenth witnessed, at Florence, the erection of palaces of which the masses and details bring to memory the forms and colossal elevations of the Romans. It is sufficient to name Brunelleschi, and the celebrated Palazzo Pitti, to be convinced that no tradition nor mixture of the Gothic construction existed at this epoch.

At this period the seats in France and England were constructed after the system of military defence at that time prevalent, which had no relation whatever with the Greco-Romano architecture, nor any resemblance with what is generally received as constituting a palace. And from this time to the revival of good taste, the habitations of kings, princes, and nobles, presented nothing but an assemblage of round and square towers, united by ranges of buildings forming spacious courts, and presenting to the eye, both inside and out, only masses of stone pierced with apertures. Nevertheless, at the epoch that these were constructed Italy was covered with palaces, in the construction of which all the regularity of the antique forms and ordonnances, the masses, details, and proportions of the finest architecture, was manifest. Already Majano, Rossellini, Pintelli, and Guiliano dá Sangallo, had erected palaces from which architects will continue to form their taste. In the palaces and private habitations erected at Rome in this the fifteenth century, the exteriors exhibit greatness, few divisions, and a well-preserved eurithmy. The windows are equally spaced: if in one story they are rectangular, and in great edifices traversed by a marble cross, in the next story they are terminated by a semicircle. Centred windows were at first without imposts, but afterwards they were added. Near to the old govern-

ment house in the same city is a small palace, which is probably of this century. The windows of each of its four stories are centred. What fine simplicity, and what repose there appears in this small construction!

Generally the chambranles of the windows and doors have few members and little relief, without pediments, but with very simple and small cornices. The same order is often repeated in the façades, and sometimes they have gone, without the intermedial, from the strongest to the lightest; and what is worse, have placed the simplest over the richest, if orders scarcely rough-hewn, meagre, and drawn with a timid hand, can be called rich. Nevertheless the ancient monuments of Rome were before their eyes; but they durst not imitate them; they were afraid to show themselves so profane.

The divisions of the stories were indicated by small projecting and acute cornices, which were afterwards tempered and changed to platbands.

In the interior of habitations they continued to construct porticoes and loggias with insulated columns supporting arches, as is proved by many of the monasteries, the palace Vicolo del Governo, and that of the duke Sforza Cesarini. Sometimes, instead of marble columns, they employed those of stone or brick, not cylindrical, but polygons, as at the palace di Venezia, Piazza de SS. Apostoli,

and the cloister Della Pace. There exists but one example of the employment of these species of columns by the ancients, which is at the Templum Rediculi.

It was at this time that the use of piers or pillars was introduced, decorated with engaged columns or pilasters, on pedestals, for the support of arches. They employed in the façades of the churches several orders, but without so many pediments, projections, and breaks; their interior was no longer basilical, but divided into three naves by arcades, or in one alone with chapels, sunk more or less, in such a manner that the two last corresponding to the great altar, became so much so, that the churches took the form called the Latin cross. There afterwards sprung another form named the Greek cross. The greatest novelty that was introduced in the churches at Rome was the cupola, which was at this time a thing of some date at Venice, and much more so at Constantinople.

Lastly, great and well-proportioned distributions, rectangular and monotonous forms, a sufficient solidity, a simple and dry decoration, without projections, breaks, or superfluity of ornaments, formed the character of the architecture of the fifteenth century, which may be regarded as the Aurora of the regeneration of taste. The general character of a century in an art is always the production of some principal master who gives the

tone; but sometimes by some great presumptuous noble who tyrannizes over the artists.

We behold in the sixteenth the boasted century, during which the fine arts flourished most in Italy, and above all at Rome. In this century the arts approached nearer to that state of perfection which characterized them under Augustus, than they had previously or have since attained. Italy prided itself in having wrought this great change; and Tuscany gloried in having, by means of the excellent artists which it had produced, spread good taste in the greater part of Europe. Florence believed itself a second Athens, and thought that in the century during which the Medicis presided over Tuscany and Rome, it had revived the flourishing centuries of Pericles, Alexander, and Augustus. It is sufficient to cite the palaces Giraud, Doria, Buoncampagni, Della Cancellaria, and the tempietto di Bramante, by Lazzari, generally named Bramante. His style was at first rather dry, and partook of that of the preceding century; but he afterwards became nobler, more tranquil, and correct. The palaces Caffarelli, Stalle d' Agostino Chigi, and chapel Chigi, by Raffaello. His works present the same purity of style that distinguished his predecessor, without having that meagreness with which he is reproached. The palaces Massimi, Altemps, Papa Guilia, Farnesiana, and Salviati, by Peruzzi, in whose productions there exists

an exquisite choice of beautiful forms, the purest profiles, and a perfect accord between the parts. The whole presents solidity without heaviness, richness without luxury, and character without affectation. The palaces Sacchetti, Farnese, Palma, church della Madonna di Loreto, chapel Paolina, and gate di St. Spirito, by Antonio Sangallo, whose works are generally esteemed for their simplicity of form, justness of proportion, sobriety of ornaments, tranquillity of style, and their real and apparent solidity. The Farnese palace, Campidoglio, and college della Sapienza, by Michel Angelo, whose talents were sublime, but without curb or measure; fertile in great ideas, and still more so in those which were fantastical. Rome ought to regard him as a criminal, guilty of the most licentious architecture, who was comparatively so much the more culpable, as the art was at this time reviving and weak, and instead of acquiring the strength that so great a genius might have given it, was only tormented and contaminated by him. He gave the tone, and his partizans and imitators were numerous, for nothing was so convenient as abandoning themselves to his caprices. Even at the present day, if the unlearned wish to praise an object which they believe to be beautiful, they consider they have established its merit in saying, It is an invention of Michel Angelo.

The villa Madama, Casino Lante, palaces Ciccia

Porci, Cenci, and the church della Madonna dell 'Orto, were erected by Giulio Romano, whose edifices are in general constructed and decorated with judgment. The palace Lancelloti, and Casino del Papa, by Pirro Ligorio. His works are models of good taste and elegance. The façade of St. Petronio, palace Isolani, and Casa di Achille Bocchi, at Bologna; the Ducale palace, at Piacenza; the churches di Mazzano, di Sant 'Oreste, and della Madonna degli Angeli, at Assisi; the church di St. Francesco, at Perugia; the palace di Firenze, at Florence; the villa Papa Giulio, temple St. Andrea di Ponte Molle, Caprarola palace, gallery dipinta dai Carracci, with the doors and windows in the Farnese palace, Doric door of the palace della Cancelleria, Corinthian door at St. Lorenzo e Damaso, frontispiece at the Orti Farnese, gate del Popolo, and church del Gesu, at Rome, by Giacomo Barozzi da Vignola. His productions may serve as guides for elegance and solidity. They are devoid of all fantasticalness and caprice, being the produce of a fertile imagination and a sound judgment; which qualities distinguished Vignola as one of the men who contributed most towards the regeneration of architecture. But that which will ensure to him an immortal fame, and cause his name to live, when the hand of Time shall have destroyed his edifices, is his work on the orders of architecture. It was com-

posed in the last years of his life, and executed under his immediate superintendance, at the time that his knowledge was matured by a long experience. It will be seen, on consulting the preface to his work, that Vignola studied rather the spirit of the rules contained in the antique monuments, than confined himself to a detailed imitation of any one in particular. In each of his orders, Vignola observed the antique examples which were generally reputed as the most beautiful. He remarked that they all owe their reputation to simple relations easily distinguished, which render the lesser parts dependant on the greater. "Wishing, for example, to establish the proportions of the Doric order, I have observed," says he, "that the Doric of the theatre of Marcellus was the most esteemed; I have therefore taken it for the principal rule of the essential parts of my Doric: but when I found that any lesser member departed from the division prescribed by the ordonnance in general, (which often happens, either from the fault of execution, or other reasons,) instead of renouncing the fundamental base, which I had adopted, I sought to establish the proportion of these lesser parts, not after any system of my own, but from other Doric monuments of antiquity equally esteemed, and in which these parts had not received the same alteration. I have always made choice of the antique orders; and on my part have only

given the distribution of the proportions founded on simple relations, without employing measures in feet or palms of any country, but solely an arbitrary measure taken from the order itself, named module, and divided into a certain number of equal parts."

Vignola never departed from great proportions, such as halves, thirds, or fourths, the observance of which constitutes the principle of that beauty, so much admired in his productions, and which has raised his work on the orders of architecture into universal repute.

The basilica di Vicenza, palaces Tiene, Trissino, de Porti, and Valmarana, at Vicenza; Foscari palace, monastery de' Canonici della Carita, refectory de' Monaci di St. Giorgio Maggiore, churches di St. Giorgio Maggiore, St. Francesco della Vigna, Il Redentore, theatro Olimpico, and many other edifices at Venice, were constructed by Palladio. It appears to have been his object to show that the beauty and utility of the antique architecture is suitable at all times and in all countries, with the modifications that the ancients themselves have admitted in their works. From his manner of imitating them, he seems to have had no other system than that of making such a judicious application of their principles, as they themselves would have made had they exercised their art amongst the moderns. From thence this free, easy, and

elegant application of the masses, lines, plans, and ornaments of the antique in all his constructions. The style of Palladio has been imitated in England by Inigo Jones, Wren, Gibbs, Chambers, and many others, who have naturalized his plans, façades, adjustment of his forms, profiles, ordonnances, and details.

The Pitti palace, at Florence; palaces Ruspoli, Sacripanti, Negroni, and Romano college, at Rome, by Bartolomeo Ammanati. His works are admired for the sage ordonnance of their details, beauty of their forms, disposition of the planes, apertures, profiles, and the harmony of the parts with the total.

The chapel del Presepio in St. Maria Maggiore, villa Negroni, Vaticana library, façade of St. Gio. Laterano, palaces Vaticano, elevation facing the city, and Albani, at Rome, by Domenico Fontana. This artist cannot be considered amongst the masters of the art whose works are classic. In his edifices a great knowledge of construction is developed, and a taste which, without being absolutely pure, wanted neither simplicity nor greatness.

The college della Sapienza, churches del Gesu, St. Luigi de' Francesi, St. Maria in Via, Madonna de' Monti, St. Paolo alle tre Fontane, and de' Greci, at Rome, by Giacomo della Porta. The architecture of his churches presents a great num-

ber of projections, pediments above each other, and other similar extravagances. In his palaces the style of this architect is very unequal. Some are palpable, such as the Sapienza, and the palaces Gottofredi, Nicolini, Belvedere at the villa Aldobrandini; others again abound with the ordinary abuse that he made of pediments, projections, mezzaninas, &c. as the palaces Marescotti and Serluppi. That of Chigi has a majestic vestibule, and a spacious and commodious court. There are many fountains of this architect situated in the places Navona, Colonna, Popolo, Rotonda, Campidoglio, and Madonna de' Monti. The best are, that in the Piazza Mattei, and another in the Campidoglio, where the statue of Marforio is placed.

The palaces Cornaro, Trissino, Molini, Pisani, Strozzi, Ravaschieri, Fino in Bergomo, and many others at Vicenza, Venice, Florence, Padua, and Genoa, by Vincenzo Scammozzi. It is easy to perceive that his style is formed from that of Palladio, but it is reproduced by this learned author with great sageness and purity.

It was in this century, during which England, France, and Germany, were a prey to religious wars, that ten pontiffs contributed without interruption to the erection of St. Peter's church, at Rome. This celebrated edifice was erected on the site of that which was built by Constantine, and

which, from the plans that remain, appears to have been composed of five naves, the arches of which were sustained by a hundred Corinthian columns. Its entrance was formed by a large square place, surrounded with peristyles. Pope Nicola V. seeing that it was in a state of great decay, formed the idea of erecting another temple that should surpass the former in magnificence. He confided the care of forming the designs for this new undertaking to Leon Battista Alberti and Bernado Rosellini. The first-mentioned architect wishing to prepare himself for the execution of this great enterprise, first undertook the construction of a spacious tribunal at the extremity of the site of the former; and for this purpose he demolished the temple of Probus, near to which it was situated. The work, however, was not raised more than three cubits in height when Alberti died. In a short time afterwards Nicola V. died, without having been able to see the designs of Alberti executed, and one of his successors, Giulio II., laid the first stone of this edifice. After having employed the most able architects in Italy to give designs for this new temple, those of Bramante were preferred; notwithstanding Michel Angelo Bonarroti, who had lately arrived in Rome, dared openly to condemn them. To accelerate the construction of this new church, Bramante demolished the columns of Constantine; which Michel

Angelo pretended might have been preserved and employed. Nevertheless Bramante raised the edifice in a short time to the entablature of the principal pillars.

Leone X., successor to Giulio II., gave all his attention to this new undertaking. He confided it to the care of Giuliano da Sangallo, Fra Giocondo Veronese, and the celebrated Rafaello, who had studied architecture under Bramante. Already this pontiff despaired of seeing the entire execution of the designs of Bramante, when Baldassare Peruzzi advised him to make several alterations in the project; this architect pretended that the plan of Bramante was defective as to solidity. He nevertheless preserved the great cupola, but gave the edifice a square form instead of a rectangular one, which was the form Bramante had assigned it. About this period, namely, 1521, Leone X. died.

Adriano VI. only survived him a year: the troubles with which the pontificate of Clemente VII. was disquieted did not permit him to occupy himself with this enterprise. Paolo III. testified his magnificence by the embellishments which the capital of his states received, and showed much zeal for the construction of the new temple. After the death of Peruzzi, Antonio Sangallo made a new project and model, which were agreed to by Paolo III. In this plan, which was more extended than that of Peruzzi, he totally perverted the

designs of Bramante. Sangallo dying in 1546, the pontiff was for some time undecided to whom it should be intrusted. At length Paolo III. appointed Michel Angelo to be the architect of St. Peter's, with full power to make such alterations in what was already built, as he might judge necessary, and to be guided solely by his own judgment in prosecuting the remainder of the design.

Michel Angelo altered the plan of this church to that of Peruzzi, namely, a cross with its four extremities of an equal length, in the centre of which are placed four pillars to support the cupola; he suppressed all that was beautiful in the plans of Bramante and Peruzzi, and augmented the dimensions of the different parts without rendering it more solid. He had not superintended the construction of this edifice more than three years when Paolo III. expired. Giulio III. having succeeded him, he continued to Michel Angelo the trust which his predecessor had confided to him. Shortly afterwards Giulio III. died: the pontificate of Marcello II., who succeeded him, was of still shorter duration. Paolo IV. was elected to the pontificate, at which time Michel Angelo was studying the construction of the cupola: the model being finished, such as it appears at the present day, its execution was retarded by the death of Paolo IV. This pontiff was succeeded by Pio IV.

who renewed the trust accorded to Michel Angelo by his predecessors.

The church of St. Peter's was raised to the height of the spring of the cupola when Michel Angelo died, in 1564: he had superintended the erection of this edifice seventeen years. Some time before his death he caused a very detailed model to be made in wood, to which he affixed the drawings and specifications. After his death pope Pio IV. named Pirro Ligorio, and Giacomo Barozzi, known by the name of Vignola, to succeed Michel Angelo: he enjoined them very expressly to follow with exactness the project of their predecessor. It was so generally thought that there was nothing left to desire in the model of Michel Angelo, that at the expiration of two years Pio V. dismissed Ligorio, for having departed from it. Vignola alone remained, and occupied himself for the rest of his life in executing the exterior according to the designs of Michel Angelo. After the death of this architect, which took place in 1579, Gregorio XIII. named in his place Giacomo della Porta, who had been the pupil of Vignola. This pontiff did not continue the construction of the cupola, but preferred terminating the decoration of the interior parts of the church. Sisto V. having succeeded Gregorio XIII., desired to have the fame of erecting the celebrated cupola designed by Michel Angelo. Besides Giacomo della Porta, he engaged

Domenico Fontana, whose talents had been proved on several occasions. They commenced to work at the attic of the great cupola on the fifteenth of July, 1588. Sisto V. being anxious to terminate this cupola, employed six hundred workmen, who relieved each other so as to work night and day without intermission. The undertaking was forwarded with such ardour, that in a year and ten months the attic and two cupolas were completed to the basement of the lantern. The pontiff gave solemn thanks over the last stone, which was laid the fourteenth of May, 1590, the cannon of the castle of St. Angelo announcing the circumstance. He caused the exterior of the cupola to be covered with lead, and decorated the seven projecting sides in face of the entrance with gilt bronze. Notwithstanding the celerity with which Sisto V. caused this work to be erected, he had not the satisfaction of seeing it completed; he died in the month of August 1590, and the lantern, globe, and cross were not terminated before November in the same year, under Urbano VII. The rest of the parts were executed by Giacomo della Porta, in the pontificate of Clemente VIII. Afterwards Paolo V. caused the church to be prolonged after the designs of Carlo Maderno, and constructed the façade from those of Michel Angelo. All the different works were completed in 1614. Urbano VIII., Innocentio X., Alessandro VII., and several

other pontiffs, enriched this temple with chapels, sepultures, tombs, and other embellishments, which were executed after the designs of the most famous artists of Italy.

The merits of this great work are, 1. The plan previous to its alteration; 2. One order alone; 3. The exterior basement; 4. The tambour of the cupola; which are truly great beauties, but mixed with the following faults.

In the interior:—1. The projection of the imposts exceeds that of the pilasters. 2. The breaks in the entablature. 3. Shapeless columns and pediments at the windows and niches, together with a superfluity of ornaments of a corrupt taste. 4. The prolongation of the nave.

At the exterior:—1. In its plan, by the distribution of its entrance, as also by the massives placed in the exterior of the circular parts of the three principal branches. 2. In the elevations, by the ordonnance of its façade, which, though possessing the advantage of one order alone, exhibits a very feeble relief, from its being engaged in the masonry, and from the extraordinary module causing vitious reductions in the principal members of its entablature. 3. An attic of too great a height, and windows of a defective and depraved form, and which are rendered still more so by improper ornaments. 4. The lantern of the cupola surmounted by a species of chandeliers.

The bad effects which result from Maderno adding three arcades in length to the part serving as entrance to St. Peter's, which from a Greek became a Latin cross are:—1. There is no longer a point of sight from whence any thing can be discovered, either of the tambour of the great cupola, or those placed laterally, not even from the extremity of the prodigious place fronting the temple; so that the most beautiful parts of this edifice remain hidden. 2. It is entered under the expectation of enjoying the effect of this grand cupola, of which so much has been said, and which expectation is in a great measure disappointed; for the spectator, perceiving only a curved aperture in the vaulted ceiling, is obliged to advance a considerable distance before he obtains a perfect view of this rotundo, which ought to present itself from all points. 3. Insignificant lateral naves. 4. The plan, which at first possessed the finest simplicity, is become complicated. 5. The addition made by Maderno is out of square, which is a capital error. 6. The façade and portico have totally failed in their effect, from the bad disposition of the doors and windows, the mixture of dwarf with colossian columns, the pediment in the centre, which intersects the windows in the attic, and the vitious style of their decoration. Indeed it is scarcely possible to produce any thing more imperfect.

There have been a multitude of embellishments successively added in the interior of this temple, which, however, from the profuse gilding, the stuccoes of the arches, and the walls being covered with different kinds of marble, have not merely destroyed the harmony, but have lessened, very materially, the general effect. Nevertheless we ought not to be much astonished at the faults and errors which are met with in so great an undertaking, when we consider that its construction was the work of three centuries, carried on under the direction of many different individuals, several of whom made considerable innovations in the simplicity of the original design. A mixture of beauty and deformity, of greatness as well as littleness of design, might naturally be expected to result from the amalgamation of so many grades of genius and talent in the erection of one edifice. It cannot be denied that no church has yet been erected, the area of which is equal in extent to that of St. Peter's; yet it by no means exhibits that apparent magnitude which a spectator, previous to entering it, expects to witness; and it is often matter of dispute whether it is equal in extent to the cathedral at Milan, or even St. Paul's at Rome. It is however sufficient to state, that the principal nave of St. Peter's is 610 feet in length, and the transverse 457 feet, and that the total length of the basilic of St. Paul at Rome is scarcely 267 feet.

Nevertheless St. Paul's appears to be of greater extent than St. Peter's. Place two ranges of insulated columns in the interior of the latter, as is the case with the former, and you will immediately discover St. Peter's to be the most spacious church in the world. The employment of insulated columns in an edifice increases its apparent extent; they fill up the vacancy of an extensive area, and form a lengthened perspective, by furnishing the eye with objects on which it can rest, and from which the mind is enabled to form an estimate of the extent of space which they occupy, and which indeed is apparently increased by their number.

This demerit of St. Peter's is derived from modern architecture, which, having proscribed the forms of the ancient basilicæ and peristyles of insulated columns, employs only pillars and massives, that produce but little effect, and give rise to heavy and unvaried constructions.

At the commencement of this century, famous for the prosperity of the arts and the cultivation of a correct taste, architecture exhibited a very promising display of genius and talent at Rome. Bramante and Sangallo treated architectural decoration with the reserve which a study of the antique monuments, as yet little known, inspired. Peruzzi, Raphaello, and Vignola, advanced with more liberty, and greater intelligence; thus the proportions of the orders were more correctly

delineated; the beauty of insulated columns was discovered; the abuse of arches placed upon the capitals of columns was condemned; a great variety of forms for churches and palaces were introduced, and their distribution enlarged; presenting at this period real and important advantages to architecture.

These benefits and this progress were strengthened by the translation of the work of Vitruvius, and the commentaries made by Alberti, Serlio, Vignola, Palladio, Scamozzi, and many other professors of architecture. Every thing appeared favourable for the establishment of a correct architectural taste, and the opportunity seemed at hand to give permanency to whatever was excellent in the art, when Michel Angelo appeared, who, with the capricious sublimity of his genius, overthrew and filled all with fantasticalness. He prescribed to and governed Fontana, Porta, Ammanati, and a multitude of others; corrupted the taste of this century, and influenced that of the following by the evil of his example. The abuses which he introduced, or that he and his partizans raised into credit are, niched and coupled columns, together with others which supported little or nothing. A repetition of the same order in several stories. Those of different heights and species in the same story; a single order which embraces several stories, others without character, or again mingled

with different characters. An abundance of pedestals without rule. Pilasters of all kinds, and even reversed, being larger at the upper extremity than the lower. Forgetfulness of proportion. Fantastic profiles. Superfluity of members. Profusion of unbecoming or insignificant ornaments. Pediments of all descriptions placed in different parts, both in the interior and exterior, without distinction. The plying of cornices and pilasters, with breaks in most of the parts. Rustics and bossages even to the superior columns and windows. Churches with façades of two stories, and interiorly encumbered with heavy pillars instead of peristyles, which form one of the greatest beauties of architecture.

The architecture of the seventeenth, eighteenth, and nineteenth centuries enriched itself with all these imperfections, and also added others; so that a detailed description of their edifices would become tedious. A chronological list of those which are the most deserving of notice will suffice. The chapel Paolina in St. Maria Maggiore, Basilic di St. Sebastiano fuori le mura, and Sciarra Colonna palace, by Flaminio Ponzio. In the last-mentioned production the fine division of the different stones, the judicious and noble proportioned distances of the apertures, a reasonable employment and distribution of ornaments at once simple and majestic, are generally admired.

At this period the style of the antique architecture was introduced into England by Inigo Jones. It had been introduced into France the preceding century by Serlio, Primaticcio, and Pierre Lescot, in the construction of the Louvre and other edifices. In the year 1620 Inigo Jones was charged with the reparation of St. Paul's cathedral at London. This old Gothic church was falling into decay in many places. Our architect erected a portico of the Corinthian order at each side of the Gothic frontispiece that he repaired. We find amongst his works the plan and elevation of one of these porticoes (that of the western side), which construction disappeared with that of the ancient cathedral, at the time of its re-construction by Sir Christopher Wren. We are obliged to acknowledge the justice of the critique that has been passed on the style employed in these additions. Nothing is so unbecoming in the restorations which are obliged to be made in Gothic edifices as this medley of different tastes, and above all of antique ordonnances, the system of which is totally different, and can produce no other effect than that of a contradiction which shocks the sight as much as the understanding. Inigo Jones was afterwards charged with the construction of the great enterprise of the royal palace at Whitehall, the designs for which he commenced and terminated in the reign of James I. the preceding monarch. It is

from this production that we are best enabled to judge of the genius of our architect. To form a just idea of this immense edifice, we have the plans and elevations, in the works of Inigo Jones, compiled by Kent; and further, a considerable fragment of this edifice has been preserved at London, and which shines like a meteor in the midst of this city, which is filled with bastard and puerile productions. It may be affirmed, that a greater or more magnificent ensemble of a palace was never conceived and projected by any modern architect; and if the disasters of the period had not interrupted its execution, London might have boasted of possessing the most magnificent palace in Europe. Unhappily, it is but in his designs that we can form an idea of its merits. The combination of variety with regularity, of greatness with simplicity, exhibited in the plan of this immense edifice, which was intended to form a perfect quadrangle, are truly admirable. The space occupied by this plan is divided into three equal parts. That in the centre is a spacious court, which traverses the whole of the palace: the other two are each composed of three courts environed with buildings, the masses of which correspond in their general appearance. The elevation of this total offers the most perfect symmetry in its four exterior façades, each of which

is formed of masses of buildings, of which the dispositions and ordonnances are balanced by a general, uniform, and always greatly varied motive, either by the advance or retreat of the parts, or the diversity of the elevations. Each façade is similar to the other exteriorly. The interior of the palace presents in the different masses of its elevations parts and ordonnances of architecture, the style of which is always the same; details which seem to be a collection of all the variety that good taste could unite.

A description of all the parts of the constructions that Inigo Jones submitted to a regular and very extensive plan would require a great number of pages; but it is not necessary to dwell longer upon this edifice, inasmuch as no more than a thirtieth of the total design has been executed. To gain a more precise idea of this project, it will be necessary to examine the works of Inigo Jones, published by Kent in 1770, where the beautiful details of this great enterprise are engraved. It is in these designs that we may discover how much Inigo Jones had appropriated the style of Palladio. Every part of this immense composition brings to mind, in the employment of the orders, porticoes, bossages, basements, profiles, details, form of the windows, doors, &c. that rich and simple, noble and elegant style, that Palladio and the architects

in Italy of the sixteenth century, applied in the palaces of the great, and also in the dwellings of private individuals.

We may be convinced by that beautiful fragment of Whitehall palace named the banqueting house, with what ability Inigo Jones appropriated the beauties of the great masters from whom he copied. It is composed of a very high rustic basement, on which rises two stories, each of which has seven windows. The height of each story is occupied by an ordonnance of columns and pilasters; the lower are Ionic, and those above Composite. The whole is terminated by an attic and balustrade. Some of the details in this ensemble give rise to criticism. It would be preferable if the cornice was not in projection over the engaged columns and pilasters. It is also to be wished that Inigo Jones had not employed the bad practice of a swelled or curved frize in the entablature of his Ionic order. Notwithstanding these little irregularities, the aspect of this edifice is rich, and exhibits a nobleness of character. The windows have elegant chambranles, the execution is pure and choice, and a person of adequate judgment acknowledges at once the style of a Palladio.

The church of St. Paul, Covent Garden, is mentioned as being constructed from the designs of Inigo Jones. This edifice presents a portico of columns of what is named the Tuscan order,

which is of great simplicity. It cannot be denied that this mass bears a sufficiently serious character, yet neither the interior nor exterior is distinguished by any merit either of composition or execution.

The Royal Exchange, at London, built at the expense of Sir Thomas Gresham, after the great fire in this city, is also said to have been erected from the designs of this artist; but it is considered at the same time as one of his inferior productions. This edifice has an arch in the centre of its façade, accompanied by a smaller one on each side, the whole of which is decorated with the Corinthian order. It is from the middle of this part of the Exchange that a lofty tower is raised, ornamented with the Ionic, Corinthian, and Composite orders. The rustic arcade is condemned because the planes are but a fourth of the breadth of the apertures, which makes the edifice appear insufficiently solid. The superior part is terminated by a balustrade, and ornamented with statues.

One of the greatest and most remarkable edifices in England is Greenwich hospital, situated on the south bank of the Thames, at the distance of five miles from London bridge. It was designed by Inigo Jones, and terminated from his projects by Webb, his pupil. This immense total of buildings, which at the present day serves as an hospital for invalid seamen, was originally destined for another purpose. Inigo Jones had projected it for a palace

for Charles I. It appears that he had but completed a part of this vast construction, when its continuation was interrupted by political circumstances. It remained in this state until William III. resolved to grant the land and buildings intended for a royal palace, for the establishment of an hospital for invalid seamen, and accordingly the part executed by Inigo Jones was accompanied with the corresponding parts and buildings which constitute the whole of the present plan. It cannot be affirmed that all the parts of this edifice are executed according to the original designs of our architect, since the change of its destination would necessarily require particular disposition. The present ensemble is composed of two spacious square masses of building, situated on an extensive terrace on the south bank of the Thames. Each of these buildings, which are perfectly symmetrical, has a court in its centre. Their anterior and posterior façades are formed of a basement, upon which the Corinthian order is placed, that occupies the height of the two stories; an attic surmounted with a balustrade crowns this ordonnance. Two parts in advance, with four engaged columns supporting a pediment, are disposed in the façade at each side of the entrance, flanked with coupled pilasters, corresponding with others at the angles, which are also coupled. These pilasters accord with four others in return, which

terminate the ordonnance and delineate the dimensions of the façade. The two anterior and posterior elevations just mentioned are united at each side by a mass of building less elevated, by the height of the attic, and perforated in each of the two stories with windows cut in the bossages, which give to these wings a very masculine character. The centre is occupied by four columns in advance, similar to those of the façade. As the whole of this ensemble is composed of two parts perfectly symmetrical, the description of one, as above, will serve to convey a just idea of the other.

The grand area or esplanade which separates the two above-mentioned buildings, discovers two cupolas of considerable elevation, which rise over insulated porticoes. These cupolas terminate a long range of buildings at each side, evidently of a style posterior to that of Inigo Jones. The whole ends in an avenue, which leads by a slight ascent to the royal observatory.

From a view of all the parts of which this great edifice is composed, it becomes evident that it is the work of different times and successive artists. The style of Inigo Jones is only found in that part of the edifice of which a more special description has been given, and in which the taste of Palladio is evident, particularly in the bossaged wings before-mentioned. Criticism would find something still further to observe respecting the

façades, both as to the disposition of the columns and pilasters, and the distribution of the masses and parts in advance, which leave the principal entrance with a secondary decoration. The weight of the attic also, which appears too heavy for the ordonnance, is objectionable. But this composition has nevertheless great beauties; it presents a noble and severe character, greatness in its masses, and that symmetrical and complete total in its lesser parts, which it is rare to find in great enterprises of architecture.

M. Milizia, in speaking of this edifice, blames it as regards its character, which, according to him, ought to have been simple, and without luxury, conformable to its destination. The critique is just; but it is necessary to observe that this fault cannot be attributed to Inigo Jones, who could not foresee this change in its destination.

We find, in some Itineraries, frequent mention of extensive country seats, erected in the different counties of England by Inigo Jones; but these notices are not of sufficient authority. The collection of his works, published by Kent, contains indeed a great number of plans and elevations for public and private buildings, but the publisher has omitted to state whether these designs are those of buildings executed, or merely projects found in the portfolio of the artist. All that can be said of these designs is, that if they have not been

executed it is to be regretted, as there is not one the erection of which would not have been desirable. They all discover the taste, style, purity, and elegance of Palladio and the best architects of the sixteenth century. This collection may be usefully consulted by those who wish to apply to architecture the forms, ordonnances, and particular character which distinguish the works of the Greeks and Romans. It may indeed be said of the character of the ancient architecture, that it was imitated with more success in the course of the sixteenth century, than at any period from the time of its restoration to the present.

The churches St. Carlo de Catenari, St. Gregorio, and St. Caterina da Siena, at Rome, were erected from the designs of Battista Soria, whose works exhibit sumptuosity and irregularity. The churches della Pace, St. Maria in via lata, St. Martina, or St. Luca, and Sacchetti ad Ostia palace, at Rome, are by Pietro Berrettini da Cortona. His works present great abuse of decoration, and all that vitiousness of style that an indolent mind, corrupt and irregular in its taste, cannot fail to introduce. The frontispiece of the church des Feuillans, rue St. Honoré, the palaces de Berny and de Baleroy, in Normandy; de Blezancourt, a part of that of Choisy-sur-Seine, de Petit-Bourg, de Blois, part of the interiors of the palaces de Richelieu and de Coulomniers, the exterior of the palace and gardens

de Gesvres en Brie, the principal part of that of Fresne, together with a chapel which was, in some respects, the model of the church du Val-de-Grâce, at Paris, the palace de Maisons, hôtel de la Vrilliere, and de Jars, the church des Filles-Sainte-Marie, in the rue St. Antoine, part of the hôtel de Bouillion, the frontispiece des Minimes de la Place Royale, to the second order exclusively, termination of the hôtel Carnavalet, and its façade, the church du Val-de-Grâce, and the projects for the completion of the Louvre, at Paris, are all by François Mansart. He has produced no work which from its merit is capable of fixing the attention of posterity, and the history of good taste in architure is as little indebted to him as to many other modern architects.

The façade of the church di St. Ignazio, and the villa Pamfili, at Rome, are by Alessandro Algardi. Algardi, in the decoration of this seat or casino, has avoided the faults of the architects of his time, which consisted in covering the façades of palaces with bass reliefs and antique statues confusedly placed, which injured the ordonnance and symmetry. This disposition in the works of Algardi is the result of a correct and judicious taste. The interior presents details of decoration which might serve as models for their species. Algardi also passes for the inventor of the superb gardens of this country seat, which are disposed

in the most picturesque and varied manner, according to the inequality of the situation. They are composed of fountains, cascades, and amphitheatres of water, which embellish and render them the most delightful at Rome.

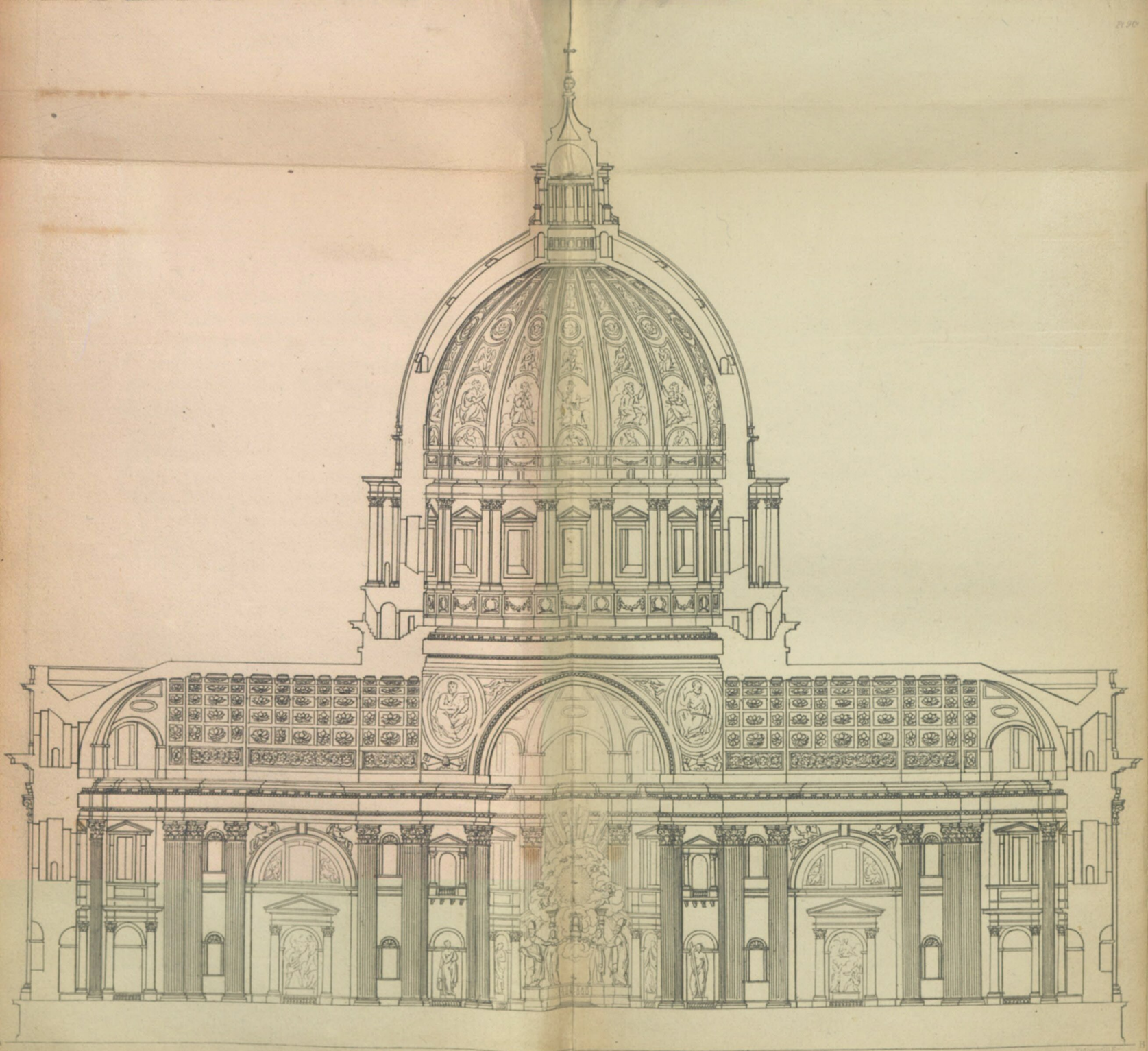
The churches di St. Agnese, decoration of St. Gio. Laterano, the oratorio de' PP. della Chiesa Nuova, di St. Carlino alle quattro Fontane, di Propaganda, della Sapienza, and della Madonna de' Sette Dolori, the palaces Falconieri a Strada Guilia and Panfili or Doria, at Rome, are by Francesco Borromini. He reduced architecture to a species of mechanical operation, and obeyed no law in the forms which he had adopted, but that of his own caprice. His fantastical elevations present a mass of vitious forms which were never employed previous to his time, the only merit of which consists in the possibility of executing them. The fertility of his invention ceases to astonish when we reflect that it is much more easy to form designs for an edifice, unshackled by the rules of art and correct taste, than to produce such as will bear the test of an enlightened criticism, and exhibit judgment, knowledge, and propriety of disposition. His style of decoration resembles that of a gold or silversmith, which is capricious, and without any immediate relation to necessity or propriety. It obeys no other authority than that of an indetermined and puerile pleasure. The only principle

which Borromini either practised or possessed was that of contradicting all who had preceded him.

The palaces Barberini, di Monte Citorio, and di Bracciano, churches del Noviziato de' Gesuiti, nell' Ariccia, and Gandolfo, Fontane, di Piazza Navona, and in Piazza Barberini, at Rome, were from the designs of Gio. Lorenzo Bernini, who also executed in St. Peter's, at Rome, the tombs, chair of St. Peter, and the high altar. It may be remarked, that in the disposition of the chair of St. Peter he has been very successful in the judicious choice of its situation. A window is situated behind the four colossian statues of the doctors that support it, the light of which produces considerable effect. Of the high altar, or rather that senseless production of four twisted columns, which sustain a canopy, as if placed expressly to encumber and obstruct the grand intersection of the four branches of the temple, it may be further observed, that it is difficult to conceive how such an absurdity could have originated with that same Bernini who constructed the colonnade of the Piazza di St. Pietro. The Piazza di St. Pietro, or place of St. Peter, is of an elliptical form, surrounded by four ranges of insulated columns, which bear an entablature crowned by a balustrade and statues. There is an obelisk at its centre, on either side of which is an immense fountain, which emits with great force and sound a considerable body of water.

This immense area, terminated by the façade of the church, the spacious steps of which form two spaces resembling terraces, presents one of those rare productions and fortunate conceptions which impart the greatest delight to the spectator; yet how much more enchanting would it be were it not for the bad taste exhibited in the façade of the temple, and the mass of the pontifical palace which weights one of its sides. Notwithstanding the faults and licences which this place offers, in spite of the bellied columns, and Ionic cornice with the Doric order, it is one of the finest productions of modern architecture. The architects up to this time had never employed so many columns to such advantage. The façades of the entrances at the extremities, and in the middle of the colonnade, are agreeable, and the lateral arches with architraves are charming. The pilasters in the two porticoes of communication between this colonnade and the frontispiece of the temple do not appear well in their inclined situation, and accord badly with the decoration of the façade.

The royal staircase erected by Bernini, in the best possible manner the situation would permit, namely, in the middle of old constructions, is very remarkable; the light is arranged with great art, the steps easy and little raised, and the ensemble majestic. What a view in descending! The insulated columns, in perspective upon the first ramp,



TRANSVERSE SECTION OF ST PETER'S CHURCH, AT ROME.

and the coupled pilasters upon the second, show the talent by which the artist has overcome the difficulty with which he had to contend, in an obligated site. The part that he has taken is admirable, but not imitable. The style of Bernini, in architecture, presents more licenses than absolute errors, and his graces prevent us from dwelling too long on his faults.

The peristyle du Louvre, and observatory, at Paris, are by Claude Perrault. This artist, in the façade of the Louvre, has presented to our notice coupled columns, which may serve as a useful example to show their inconsistency. They add nothing to the strength, under which pretext they have been employed, since, if equally divided, they would have afforded much greater solidity, independent of their increase of beauty, by having a considerable less portion of the soffit to support. The peristyle du Louvre, indeed, as originally designed by Perrault, that is, before the windows were made under the colonnade, seems but to have been erected to exhibit the pompous magnificence of a court, and not for the purposes for which similar erections are employed. Yet notwithstanding the greatness of the style which is expressed, the proportions of the windows of its basement, and also the application of the pilasters which are employed at the angles of its pavilions or extremities, are not of a pure taste. In the rest of its

details, however, we are indebted to Perrault for having revived with great ability the justness and beauty of the antique proportions, a purity in the profiles, elegance in the forms and ornaments, and a correctness and finish in the execution.

The palaces Renuccini, Altieri, Astalli, and Muti, and the chapel del Monte della Pieta, at Rome, were erected from the designs of Gio. Antonio de' Rossi, whose style in architecture was great, and of large division. None showed more ability in lighting the interiors. His taste in decoration was sage. He particularly possessed the art of accommodating his designs to, and of drawing an advantage from, the different situations of his productions, and of giving an appearance of greatness even to the least spaces.

The bridge de Saintes, the gate of St. Denis, and the restoration of those of St. Bernard and St. Antoine, at Paris, are by François Blondel. The celebrated gate St. Denis exhibits an architectural character between that of gates and arches; custom has, however, sanctioned the name of gate. It was according to this character that it was composed and that it ought to be examined. Its just denomination will then be a triumphal gate. Some details of its architecture, as also the fine execution of the sculpture, are composed after the antique style, whilst the adjustments are according to the style in vogue at the time of its

erection, which consisted in observing certain systems that have for a long time impeded the progress of architecture. Francois Blondell being a learned mathematician, in designing the masses and general dimensions for this gate, professes in his treatise on architecture to have subjected them to, and determined them by, a rigorous calculation, although in the execution the measures do not altogether correspond. He has inscribed the general mass in a perfect square, and intended that the width of the aperture of the gate should be equal to that of the piers. The height of this gate is twice its width, the pedestals are a fourth of the height of the mass, and the impost of the arch is one half of its height. He conceived that he had demonstrated, by the exactness of his relations, that the eye ought to be satisfied, because the science of numbers did not permit of the least doubt, in his estimation, as to the beauty of the forms so determined. When, therefore, an enlightened traveller, whose taste has been formed from the noble character of the antique architecture, presents himself before this monument, and criticises the mass as having a little meagreness, he may be immediately answered, *It forms a perfect square.* If he finds the width of the aperture of the gate too contracted, and not bearing sufficient proportion to the planes, he is as quickly informed, *It is equal to the piers.* But its aperture is propor-

tionally too high. *It is of twice its width, and this is an admirable dimension.* The massive wants thickness, and does not convey a sufficient idea of resistance. *This thickness is exactly the sixth of its face, &c. &c.* The observer is obliged to agree that the calculations are just, but not entirely satisfactory; in which example he proves for himself that beauty in architecture cannot be founded solely on the relation of numbers. Is it not, on the contrary, evident, that this equality of measures destroys the government which the essential parts ought to have over the proportion of the rest, and gives a monotony which is injurious to the effect of this great composition? Indeed a mind exempt from the prejudice of false systems, and conversant with the impressions which bodies, happily modified, make upon the eye from the effect of perspective, and the combination of light and shade, would, in judging of a piece of architecture, feel itself authorized to say that numbers do not suffice to determine the proportions of architectural designs. As to the decoration of this triumphal entrance, although great and majestic, it presents dissimilar and compound ideas. Such are the pyramids, which ornament the faces of this monument, whose mixed forms partake of that of an obelisk, and the principal fault of which is in being applied to a triumphal entrance. This form being dedicated to tombs and funeral objects, imparts a sepulchral

expression to this monument which is evidently in contradiction with its real character.

The palaces Royal de Clagny and de Versailles, the establishment de Saint Cyr, church des Invalides, and the place de Louis-le-Grand, or Vendôme, at Paris, were constructed from the designs of Jules-Hardouin Mansart. The palace de Versailles presents only an architectural total in the elevation fronting the gardens. The façade in face of the avenue which forms the principal entrance conveys rather the idea of a number of different edifices than of a palace. The masses are so dissimilar and different, both as regards the style and proportion, that the attempt which has been made to form a regular total of the whole has been without effect. If we examine the façade facing the garden, its disproportion strikes us at the first glance; it proceeds from the want of relation which exists between its length, which is about thirteen hundred feet, and its height, which does not exceed sixty feet. Every one must feel the insipidity of this long line, in the disposition of which there is neither relief nor movement. The columns forming small parts in advance, which are disposed at intervals, produce no effect; the basement, ordonnance of the principal story, and continued attic, possess no other merit than that of a contracted conception of regularity and symmetry, which displays a very ordinary taste, and is not at

all suitable to give value to the composition of this great edifice.

The master-piece of Jules-Hardouin Mansart is the dome of the Invalides, at Paris. It appears certain that the project of a cupola did not at first enter into the views of the projector of this monument, nor in the designs of the architect of the church and hospital des Invalides. The manner in which the church was conceived and executed by Liberal Bruant is the proof; and when it was designed to embellish the total of the establishment des Invalides by a cupola, this cupola could not be placed elsewhere than at the extremity of the church, which produced in reality a union of two temples without any relation existing between them.

Jules-Hardouin Mansart being more at liberty, in the conception of his cupola, than the other architects of similar edifices, since this cupola only became an addition of the then existing church, was led to design it as a separate construction, with dispositions solely in relation with itself. So that in considering the plan, we find, by the distribution of the chapels which surround this dome, that it presents a total which is different to any that had ever been erected in a similar situation.

The dome des Invalides being carried perpendicularly from the pavement, and the great solidity which the architect found in the accessory massives

with which he could dispense, gave him the means of practising a new manner of distribution in the four piers of his cupola. He penetrated them with arcades without injuring the strength of his supports, and these apertures not only served as entrances to the chapels situated at each angle, but also gave a lightness which on the whole produces a more varied and picturesque effect than is often met with elsewhere. It cannot be denied that in this respect Jules-Hardouin Mansart has given proofs of considerable talent.

The extravagances and incorrectness with which Michel Angelo infected the architecture of the sixteenth century, were increased in the seventeenth by the caprices of Borromini, of which the following enumeration forms a part. Twisted, bellied, and intricated columns, placed without motive upon heaps of pedestals, socles, and plinths; fantastical capitals with the volutes reversed; bastard, interrupted, and undulated entablatures; displaced, broken, and deformed pediments; inverted balusters, with facets, profused even to the summits of pediments; the façades of churches in caricature, and their interiors heavy and without expression, together with a superfluity of ornaments.

The simplicity of Ponzio, Algardi, and Jones, and the elegance of Bernini, ought to have had some influence in the architecture of the eighteenth cen-

Corinthian columns below, and eight Composite above, supporting a pediment; the whole resting on an elevated base, the ascent to which is by a flight of steps running the entire length of the portico. At each of the two extremities of this façade is placed a small cupola, after the example of those of St. Peter. The porticoes of the northern and southern entrances are semicircular, and consist of an entablature supported by six Corinthian columns. At the eastern extremity of the church is an apside, or semicircular part, within which the communion table is placed. The walls are ornamented by two ranges of coupled pilasters, one above the other, the lower being Corinthian, and the other Composite. It is at the intersection of the four branches of which the plan of the edifice is composed, that the dome or cupola is situated. Its plan at the lower extremity forms a regular octagon; each of its faces are occupied by large arcades, forming the communication of the naves. Four of these arcades, which are those situated opposite the angles of the cross, are constructed as immense niches; the lower part of each is penetrated by two smaller arcades, forming a right angle. These arcades correspond to the lateral naves of the two contiguous branches. This ingenious disposition procures very interesting overtures, the idea of which was probably derived from the plan of the cupola di Maria del

Fiore, at Florence: be that as it may, this arrangement is much better than that of placing a massive in each angle, which has been adopted in almost all modern cupolas. There is a further advantage of forming a more solid base, and of the pendentives having less projections, by being composed of eight points of support instead of four.

The interior of the lower part of the dome is decorated with a continued stylobate, upon which are placed Corinthian pilasters at equal distances, and surmounted with a complete entablature, over which is placed a second stylobate, from which springs the dome. The thirty-two equal spaces between the pilasters are occupied by twenty-four windows and eight large niches. In the decoration of the dome Wren wished to apply the effect of a regularly disposed colonnade of equal intercolumnations, and supporting a continued entablature, instead of being interrupted by projections resembling those of St. Peter's at Rome, and the Invalides at Paris. In saying that he wished to produce an effect similar to a colonnade, the expression is justifiable, for it is rather the appearance of one than one in reality. First, the columns, which are placed on a continued stylobate perfectly similar to that of St. Peter's, are engaged in piers from which arches are sprung that bind them to the dome, and massives are placed between every fourth intercolumnation, in the angles of which they

are engaged. In the interiors of these massives are winding staircases, being in the whole eight in number. This disposition, particularly at a distance, gives a very rich effect to the dome, which appears to be surrounded by a circular colonnade. The passages in the massives permit of free circulation round the whole of the dome. The regularity of the intercolumnations, and continuance of the entablature, give a value to this decoration, which by a nearer inspection is perhaps depreciated by other irregularities. Be that as it may, it cannot be denied that the whole produces a fine effect. The attic is in retreat the whole width of the colonnade, and is ornamented with windows of rather a sage taste. The calotte, or exterior of the dome, has its sides decorated with flutings. The lantern presents nothing very remarkable. The curve of the dome is very fine, and approaches to that of St. Peter's.

Of late years there has been placed in the interior of this temple a number of statues and sepulchral monuments, which partake of the same false taste of invention as those in Westminster abbey, amongst which it is difficult to discover any that are consistent with the reason, taste, sentiment, and judgment, which these species of monuments ought to present. In this country these kinds of productions are in want of a principle of imitation, to form a regulating type. Religion does not at all

enter into the first conceptions; and the more a taste for these monuments has increased, within the last half century, the more the artists have felt this want of a fundamental idea to serve as a base to their compositions. In England the tombs are simple political monuments, which the religion admits in the churches, but under condition of being without relation with a worship that does not admit of images. The most modern tombs, whatever be the merit of their execution, are almost always dramatic compositions, in which we see contrasted, in a manner the most revolting to good taste, unsuitable costumes, misplaced allegories, and a style of composition altogether at variance with an enlightened judgment.

Independent of the monuments just mentioned, the decorative part of St. Paul's is the most inferior of this celebrated edifice. This temple derogates in the most striking and almost absolute manner from that purity of style which ought to enter into the composition of such edifices, which is proved by the nature of the proportions of its different parts. At the exterior, the frontispiece is decorated with two orders raised one above the other, the columns of which are coupled on a line parallel to the horizon. In the interior, the piers of the naves and choir are enriched with pilasters of large and small dimensions. The entablature is complete only perpendicularly over

the large pilasters. The arcades, which repose upon the lesser pilasters, enter into the height of the architrave and frieze of the entablature. The supports of the dome, decorated also with pilasters, are opened by a first range of arcades, which is placed directly upon the cornice of the large pilasters, and penetrates its acroteria. A second range of arcades, the curves of which are of a different species from those of the first, rises upon the same acroteria.

These are striking dissonances in the style of this temple, otherwise so justly celebrated for its great extent and ingenious cupola, which furnish lessons by the study of which the artist will be enabled to form just ideas as to the vices against purity of style.

The fountain of Trevi, at Rome, the greatest that this city presents, was constructed from the designs of Nicola Salvi. The subject of this fine composition is the ocean personified, gigantic in stature, and in an upright and commanding position, proceeding from a fine niche decorated with Ionic columns. Neptune borne on a shell, and drawn by sea horses, which are guided by Tritons, appears to be forcing his way over a mass of rocks, from all parts of which issue streams of water. In the midst of tumultuous currents the horses appear at full speed, with their Triton guides, labouring through the troubled element, which falls with

considerable effect into an immense basin beneath. This beautiful production is situated immediately contiguous to the palace of the Duke di Poli, which forms its extremity, and is decorated on each side of the Ionic niche with Corinthian columns, which embrace two stories, and contain in their intercolumnations statues and bass reliefs. Upon the two sides, but in retreat, are four Corinthian pilasters, which also embrace two ranges of windows. Upon their entablature is an attic, which is lower than that part in advance. This description may suffice to make known its beauties.

The hospital Il gran Reclusorio, and cemetery of the hospital Il Tredici, at Naples; the palaces Giordani and Caramanica, near Spadaletto; and the villa Jaci, at Resina, near Portici; the churches Maria Maggiore, del Bambin Gesu, Maria dell' Appollinare, and della Morte, hospital St. Spirito, and the palaces della Consulta, Petroni, and Corsini, at Rome, were erected from the designs of Ferdinando Fuga, whose works partake, in their decoration and details, of the vices and abuses of the school of Borromini. The interior distribution, and exterior disposition of the last-mentioned palace is, however, admired; and it may be remarked, that few palaces have been better conceived, or executed more at large, than this. Its three overtures, great staircases, and the proportions of its façade, all exhibit a great-

ness of design. More sageness and purity in the details and style would have augmented the merit in the eyes of artists and men of taste.

At the commencement of the eighteenth century flourished Lord Burlington, who was not only distinguished by his good taste and general knowledge of the fine arts, but also celebrated for his skill in architecture, which he had cultivated with great success. He travelled for a considerable time in Italy; during his residence in which country he studied with particular attention the immortal remains of this classic soil, as also the works of Palladio, sixty of whose original designs he collected and published, together with a volume of the Antique Thermæ. To the above designs of Palladio, Lord Burlington also added several of his own compositions, at the lower part of which he unassumedly inscribed "Burlington, architectus invenit." This great man, who was a most zealous patron of the arts, was prouder of that title, which he derived from his favourite art, and which he had deservedly acquired by a long and diligent study, than of that which he possessed from his noble ancestors. In 1724 he furnished designs for the stately mansion of General Wade. The ground story is decorated with rustics, which gives to it a very imposing effect; and the story above is ornamented by well-distributed Doric pilasters, supporting a simple frieze. The windows with

balustrades possess great simplicity. The whole of this total presents a degree of solidity, correctness, and unity, that affords considerable pleasure to the spectator. His beautiful villa at Chiswick, which was erected from his own designs, and which he embellished with a number of fragments of architecture, is an ensemble capable, by the happy motives which are manifest in its distribution, of doing honour to the first masters of the century. He furnished designs for the arcade and front of the dormitory at Westminster, Burlington House, London, together with a church in the same city, and several other classical productions, which will be lasting memorials of the talents of this celebrated, zealous, and enlightened patron of the arts.

The most important production of its kind in this century was the palace of the king of Naples, at Caserte, by Van Vitelli, being the only enterprise of this century which for the simplicity of its plan, immensity of its superficies, and greatness of its mass and elevation, brings to mind the eminent productions of the fifteenth and sixteenth centuries.

In the nineteenth century greatness of taste entirely disappeared, and this century would not have had one example to cite, if Soufflot had not erected St. Genevieve's church, at Paris, and a few minor productions which have been executed since. The plan of this temple is in the form of a

Greek cross, composed of four principal naves. A hundred and thirty fluted columns support its arches, under which are galleries. The cupola is placed in the centre of the edifice, and is sustained by four triangular pillars, the angles of which are fortified by engaged columns ranging with those of the naves. The interior faces of these pillars are decorated with pilasters of the same order and diameter of the columns, which are Corinthian. These four pillars form, at the exterior of the angles, a large square, the interior angles of which are interrupted by a third face. The four principal sides are opened by large arcades, between which, and over the interior faces of the pillars, rise the four parts of the arch termed pendentives, which serve to form the circular plan of the tower of the dome. These arcades and pendentives are crowned by a large entablature with modillons. The interior of this tower is decorated with a continued stylobate, which serves as basement for a colonnade composed of sixteen Corinthian columns placed at equal distances. These columns are almost insulated, being only attached to the wall of the tower by a kind of tongue, which does not appear from any point of view, and which serves to strengthen the wall to which they are joined. Behind this stylobate, and between the bases of the columns, are a species of galleries. In the intercolumnations

above are sixteen large windows, four of which are feint, and correspond with the four pillars previously mentioned. The colonnade is crowned by a complete entablature, over which is a large socle, which rises to the height of the spring of the interior cupola. The arch is decorated with octangular compartments and roses, and is terminated at the summit by a large circular aperture. Through the opening of this first cupola the extremity of an intermediate arch may be perceived, upon which a subject in painting is executed.

The exterior of this temple presents at its principal entrance a peristyle composed of twenty-two Corinthian columns, which support an entablature and pediment ornamented with bass reliefs. Behind this peristyle, and from the centre of the edifice, a circular gallery rises which is placed upon a stylobate of the same form, and is composed of thirty-two insulated Corinthian columns. The four massives which serve as buttresses, and in the middle of which are staircases, are situated directly under the gallery. Although this colonnade is in a manner divided by these massives into four equal parts, nevertheless there remains sufficient space between them and the columns to admit of free circulation under the gallery, where no column is either strengthened or engaged, and the appearance of a colonnade effectively exists in all its reality, both near and at a distance. In retreat

from this colonnade rises an attic with circular-headed windows, immediately above which rests the cupola, surmounted by a lantern.

The temple of St. Genevieve loses greatly as regards style, both in the massives of its plan, and proportions of the order employed. Firstly, at the exterior, the peristyle of the frontispiece is vitious in its plan. The columns which accompany its extremities are in retreat. A species of pilaster is also placed at all the projecting angles of the temple, and likewise the angles which join its four branches are interrupted. Such are the faults committed in the masses against purity of style. Afterwards the essential parts of the orders, interior and exterior, are altered in their principal members. Lastly, the arches, penetrated by a multitude of lunettes, and covered with ornaments of an improper kind, destroy the purity of style which ought to exist in so important a monument.

Our century, though enlightened by so much science, has adopted in architecture all the absurdities of those that have preceded it, and is rendered still more reprehensible by the misapplication of its decorative parts. This misapplication is carried even to the employment of its constituent members for arbitrary ornaments, which are lavished without judgment. We never see a fault committed by their temperate application, but always by a redundance, except we confine ourselves to

dwellings and other simple constructions, where their employment has not been intended.

It is in Rome alone that examples of architecture may be found capable of supporting the severity of criticism. The examples which it presents are formed of parts so great and beautiful, that no other country can vie with them in quality or number. Such of its edifices as may be censured with the greatest reason have still some merits, and often fewer faults than those which are considered masterpieces in other countries. They offer a sage conception, happy and picturesque dispositions, beauty in the total and details, and an almost never-ending variety. It is true that all the epochs of its history have not been equally remarkable, nor distinguished by a similar purity of taste; but genius has always presided in the conceptions produced in this beautiful country.

There exists in Italy, and above all at Rome, a great number of delightful habitations, which, under the most simple forms, bear the marks of genius, and show the attentive artist that it is possible to acquire fame by proper application, even in the least productions. This observation ought to console those who profess an art in which a very rare concurrence of fortunate circumstances only can afford them an opportunity of displaying their talents in the erection of any important edifice.

If Bramante, Vignola, Palladio, Sangallo, and Perruzzi, have found models in antiquity for the edifices that they have erected; if these great masters have been enabled to employ, even in the least dwellings, that beauty of ordonnance, happy disposition, and research, which constitute the charm they possess, why do we not seek to imitate their example?

No one can behold, without the most lively interest, the works of the able men just mentioned, who, in the construction of a simple habitation, manifested the same talent, care, and research, as they displayed in the erection of temples and sumptuous edifices. They have embellished all; and in their hands the modest retreat of the sage became as agreeable as the magnificent palace of the prince. They were sensible of the importance of their art, and from their works we may learn how to redeem it from the prejudices of routine and extravagances of caprice. They have taught us to take nature for our guide, and its imitators for our models; they have, in a manner, restored architecture, by reclaiming its real end. We behold them every where profit from the situation of the site, and fill with an admirable skill the wants which the object requires. They were ingenious even in the most minute details, and never executed at hazard. They perceived that nothing can be beautiful in architecture but what

is commanded by an acknowledged utility; that true genius is manifested, not as some moderns have believed, by making war upon reason to create novelty and produce fantastical extravagances, but in happily employing in the art the means that nature indicates, the site commands, and the wants require. It was by fulfilling these conditions that they were enabled to give to each object its proper character; and being always thus guided by good taste, they have succeeded in overcoming the difficulties which they had to encounter. The greater part of their productions bears the stamp of that rare simplicity that enchants the mind like an unveiled truth, which appears always easy to those to whom it is disclosed.

The Italian architects have far surpassed all others. It appears to have been their endeavour to produce the greatest effect by the simplest means, whilst those of our nation appear to have sought its production in the contrary extreme. The real cause of this degradation of the art is not occasioned by any consideration of economy; for it is easy to prove that our architectural productions are more expensive, as in Italy the buildings and edifices owe their splendour rather to the arrangement of their plan and aspect of their mass, than to any vain profusion of ornaments.

These are certain proofs, though pronounced with regret, that architecture has never been in

great favour in our nation; for it is no proof that the fine arts have made their abode in a city because a palace, a temple, or a monument, may be found therein. Powerful individuals might for a time have favoured the art from pride or caprice; but when at each step we are arrested by a masterpiece of magnificence or simplicity; when, above all, we meet with monuments erected for public utility; when the most minute details bear the marks of that delicate taste which announces that an entire people has cultivated the fine arts, then it is that we know we are in Italy, in which beautiful region the arts were for a long time domesticated. It is there alone that the most modest habitation offers to the observing artist beauties which are less imposing from their extent, than by the correct distribution which they present, satisfying all that necessity requires. It is from this ingenious people that we ought to receive instruction, amongst whom alone models can be found worthy of our imitation.

PRINCIPLES OF ARCHITECTURE

ACCORDING TO THE

PROPORTIONS OF THE ORDERS

OF THE ANCIENTS.

HAVING reviewed the productions of the most celebrated artists, as fully as the nature of the present work would permit, and endeavoured, whilst doing justice to the merits of their works, to draw a useful lesson from their errors as well as from their beauties, we shall now proceed to the consideration of the principles of architecture, and to the developement of those rules which form the basis of the art.

A knowledge of the productions of the ancients is of the greatest importance to the student, in order to give him a just idea of the relations which the mass of an edifice ought to bear to its principal parts, and those to the details, as well as the relation that should exist between the parts in advance and those in retreat. This knowledge will enable him to determine the just proportions which ought to exist in the different parts of a building, from the dimensions of any of its mem-

bers. It is easy to perceive, that if we neglect in the commencement of a composition the proportions which ought to exist between the length and height of the façade, and the quantity of aperture which it ought to contain in proportion to the interior, there will result at most only a fine ordonnance, whilst the interior will show the effects of this negligence, and the edifice, as a whole, be imperfect. This kind of imperfection presents itself to our notice in many productions of the present day, the architects of which seem to have limited their studies to decoration only. There are numberless examples which prove that to establish a reputation for architectural genius and knowledge, it is not sufficient to raise fine elevations, the parts of which will not permit of divisions, but to manifest an adequate knowledge of chaste decoration, intelligent distribution, and the most perfect and judicious modes of construction, without a profound knowledge of which the expectation to become a first-rate architect is vain. A knowledge of chaste and elegant decoration is indispensable, and can only be acquired by the study of the proportions of the five orders, which form the base of the principles of decoration in architecture; and if it be not the most essential, it may at least be regarded as that portion of the art which does the most honour to the architect.

In speaking of the origin of the orders, we have regarded the Greeks as the inventors of the Doric, Ionic, and Corinthian; and as having received their perfection under the Romans, in imitation of whom the different civilized nations have, in general, received and employed these orders in the decoration of their edifices. The Doric order is generally considered as proper to express solidity; the Ionic, the medium; and the Corinthian, delicacy and grace. It is necessary to observe, that the supposed Composite order has the same proportion as the Corinthian, being only a mixed composition of this order and the Ionic; that the Tuscan is nothing more than a simplification of the Doric; and that, in reality, there are but three orders in architecture, namely, the Doric, Ionic, and Corinthian: this at least is the opinion of the most celebrated authors on this subject. Nevertheless, I shall give the proportions and different expressions of these five orders, in which I shall conform to the principles laid down by Vignola, commencing with the Tuscan, and ending with the Composite, without regarding the different dates of their origin.

OF THE FIVE ORDERS IN GENERAL,

Plate 1.

A GENERAL idea of the five orders will be obtained from this plate, in which they are all reduced to the same height, thereby rendering their comparative proportions more apparent, and exhibiting at one view the difference of diameter and general expression.

The Tuscan order is distinguished by the simplicity of its members, and massive proportion, the height of the column being but seven times its diameter, or fourteen modules, which is the determined measure for this order. The laws of good taste, and the experience of past ages, seem to prove that no order whatever can be employed in any important edifice under those dimensions. The Tuscan order may be employed in prisons, barracks, hospitals, entrance gates, magazines, markets, &c.

The column of the Doric order is of eight diameters, or sixteen modules in height, and is distinguished by the triglyphs which are distributed in the frieze of its entablature, and by an expression less simple than the preceding order. From its masculine character, and the symmetry of its members, it

might often be well employed in the different kinds of sacred, public, or private edifices; such as churches, tribunals, and banks; or in commercial edifices, as halls or exchanges, and in all other erections that require a character of stability and security. This was the first order discovered by the Greeks; and these ingenious people appear to have employed in its composition all the resources of the art.

In the Ionic order the column has nine diameters, or eighteen modules, in height, and is characterized by the volutes of its capital, and by its proportions being lighter than those of the Doric. It may be suitably employed in the exterior of villas, and in the interior of apartments, and may also sometimes be placed as the second order in the exterior elevation of buildings.

The Corinthian order is still lighter than the Ionic, its column having ten diameters, or twenty modules, in height. It is characterized by the delicacy of the ornaments of its capital, and by the division of the members of the cornice of its entablature. It is considered as the last term in architecture, for it has been generally admitted that an order which has more than ten times its diameter in height appears incapable of supporting any weight; whilst, on the contrary, the Tuscan order should not have less than seven diameters, preserving thereby a certain degree of beauty, and

retaining its expression of strength and simplicity. The Corinthian order may be employed in the decoration of palaces, in the interior of churches, &c. and generally in all situations where elegance and magnificence ought to be preferred to strength and simplicity.

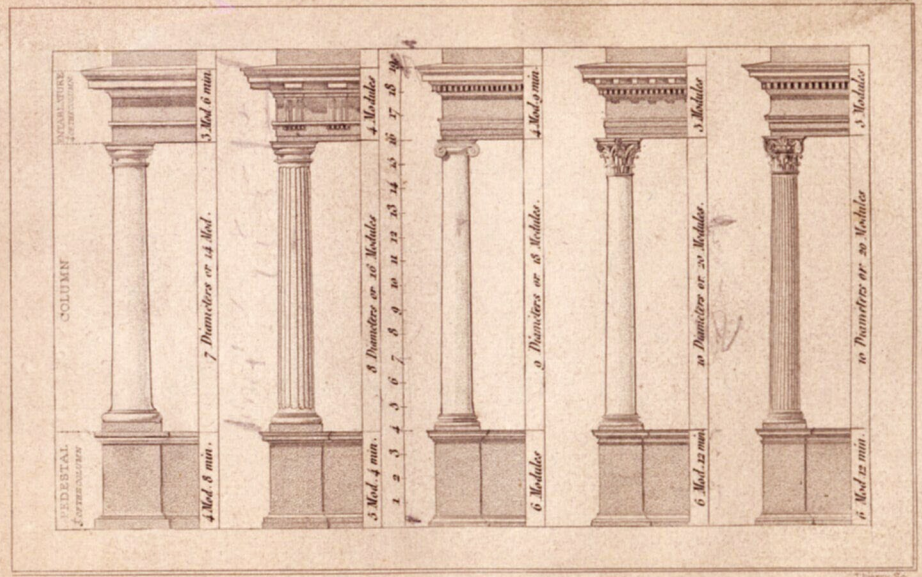
Lastly, the Composite order, being of the same proportion as the Corinthian, distinguishes itself by the ornaments of the medium and delicate orders, of which its capital is composed. This order might be appropriately used in the decoration of triumphal arches, theatres, public *fêtes*, and on all occasions where symbolical ornaments ought to have the preference to those essentially consecrated to the other orders.

THE GENERAL DIVISIONS OF THE FIVE ORDERS OF ARCHITECTURE.

Plate 1.

AN order of architecture, according to Vignola, is generally composed of three principal parts, namely, of the column, which assigns to all the rest of the ordonnance constant and determined proportions; the pedestal; and the entablature.

THE FIVE ORDERS OF VIGNOLA.


ENTABLATURE
COLUMN
PEDESTAL
3 Mod. 6 min.
7 Diameters or 14 Mod.
4 Mod. 8 min.
4 Modules
8 Diameters or 16 Modules
5 Mod. 4 min.
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18
4 Mod. 9 min.
9 Diameters or 18 Modules
6 Modules
3 Modules
10 Diameters or 20 Modules
6 Mod. 12 min.
3 Modules
10 Diameters or 20 Modules
6 Mod. 12 min.

TUSCAN. DORIC. IONIC. CORINTHIAN. COMPOSITE.

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In each of these three parts are comprehended three others, namely, the pedestal, which is comprised of a base, die, and cornice; the column, the parts of which are the base, shaft, and capital; and the entablature, consisting of the architrave, frieze, and cornice.

These different parts are composed of several others, to which is generally given the name of mouldings. By this word is understood all the members of architecture, which constitute the art of profiling, whether it be in the application of the orders, or in the ordonnance of the decoration of buildings. Mouldings in general take their expression of solidity, elegance, or the medium, from the different orders to which they belong, and which are reduced to seven different kinds, the names of which, together with their respective dimensions, centres, and manners of tracing, will be found in the tables and plates of the details belonging to each of the orders. See plate 2.

THE GENERAL DIMENSIONS OF THE FIVE ORDERS OF ARCHITECTURE.

Plate 1.

ACCORDING to Vignola, the height of the pedestal ought to be one-third of that of the column, and the entablature one-fourth. To find this relation, it will be found most expedient to divide the total height of the ordonnance into nineteen equal parts, appropriating four for the height of the pedestal, twelve for that of the column, and reserving the three remaining parts for that of the entablature. Three being the fourth of twelve, and four the third of this number, and these three quantities, four, twelve, and three, being equal to nineteen, form a division which serves as a general rule, not only to determine the heights of the Tuscan pedestal, column, and entablature, but also the relations of those of all the other orders. To determine the expression of the Tusean, Doric, Ionic, Corinthian, and Composite column, the height of the Tuscan must be divided into seven parts, the Doric into eight, the Ionic into nine, and the Corinthian and Composite into ten. These divisions being made under

a given height, which is common to the whole, as in plate 1, the different diameters which each order ought to possess will be immediately found; the proportions of which will be,—the Tuscan one-seventh, the Doric one-eighth, the Ionic one-ninth, and the Corinthian and Composite one-tenth of the height of the column. That being determined, each of these diameters will be divided into two equal divisions, and one of these divisions will form a module, destined to measure the principal parts and details of the order. This module is again divided into twelve parts or minutes for the Tuscan and Doric orders, and into eighteen for the Ionic, Corinthian, and Composite orders, in order to avoid fractions. The system most generally adopted for the diminution of columns is that which commences from a third of their height.

THE TUSCAN ORDER.

THE clearest and most incontestable proofs which remain for us of the style of the Etruscan architecture is, without doubt, that ordonnance of the Tuscan temple still employed at the time of Vitruvius, who has given the measures and

details, not as if this style were out of use, but in language similar to that which he employed in describing the other temples existing at his time. This ordonnance of the Tuscan temple, the only monument that we have of the Etruscan architecture, as preserved at Rome, has been the source of great error in the modern systems of the orders. To this may be attributed the appearance of a pretended Tuscan order, which has been placed as the first in the scale of the orders. From a similar error, a supposed Composite order, which has never had existence as a distinct order, has been raised to the highest place in the scale.

The Tuscan ordonnance, as given by the moderns, is not, however, purely of their invention; but, as will be shown, the error has been committed by taking that for a separate order which is, and always was, the order called Doric, but practised in Etruria with some variety of proportion and slight modifications, independent of the imitation of the carpentry, or constructions of wood, which constitutes the special and original character of the Grecian architecture.

In order to be convinced of this identity of origin between the Tuscan ordonnance and that of the Greeks, it is necessary to consult the specimen of the Tuscan temple designed from the description given by Vitruvius, a drawing of which may be found in Piranesi's work on the magnificence of

the Romans. The reader shall, however, be presented with a faithful translation of the text of the Roman architect, on the ordonnance of the Tuscan temple.

Vitruvius, b. 4, c. 7. "The diameter of these columns, taken at the bottom, should be of the seventh part of their height. Their height should be a third of the breadth of the temple. Their diminution at the top should be a fourth of the diameter at the bottom. Their base should be half a diameter in height; it is composed of a circular socle or plinth, having the half of the base in height, and of a torus which, with its fillet, should be of the height of the plinth.

"Upon the columns should be placed coupled beams, the thickness of which should be proportionate to the size of the edifice, and the breadth equal to that of the collarin of the column. These beams should be joined together by a dovetail, so as to leave between them a space of two fingers breadth; for if they are placed so near that the air cannot pass between, they will produce heat, which causes the wood to rot. Upon these beams, and upon the masonry which is placed thereon, should project the mutules, having a projection equal to a fourth of the diameter of the column. To their ends may be applied the usual ornaments, over which should be placed the tympan with the pedi-

ment, either of masonry or carpentry. Upon the pediment should be disposed the pans and boards, in such a manner that the stillicidium or eaves may correspond in projection to the tertiarium, (that is to say, to the eighth part of the totality of the tectum.)" See, for the explanation of the tertiarium, Vitruvius, b. 3, c. 1.

Nothing is easier, as may be seen, than to restore the Tuscan ordonnance, after such a detailed description; and such a restoration can have nothing arbitrary, since not only the whole, but each of the parts of which it is composed, have been described by Vitruvius, who has taken great care to give us the measures and relations of their proportions, which the moderns have most incontestably departed from. Indeed the designs which all the translators or commentators of this writer have placed to his text most satisfactorily demonstrate, that the modern Tuscan sensibly differs from the ordonnance of the Tuscan temple as described by Vitruvius.

If a design of the Tuscan temple, such as would necessarily result from the text and proportions of Vitruvius be consulted, what do we there see but all the parts and details of the Grecian architecture?

TUSCAN ORDER OF VIGNOLA.

PLATES 3 AND 4.

Names and detailed Proportion of the Members and Mouldings of which the Order is composed.

		Heights.			Projections from axis of Columns.		
		Modules.	Parts or Minutes.	Fractions	Modules	Parts or Minutes.	Fractions
	Drain	-	2	-	2	3	
	A. CORNICE.						
	Quarter round	..	4	..	2	3	
	Astragal	..	1	..	2	....	..
	Fillet	..	....		1	11	
	Conge	..	1	..	1	10	
	Corona	..	5	..	1	10	
	*Canal	..	1	..	1	9	
	*Flute	..	....		1	7	
Entablature 3 mod. 6 parts	Fillet	..	....		1	2	..
	Cyma Talon	..	4	..	1	1	
		1	4	-			
	B. FRIEZE.						
	Frieze	1	2	-	....	9	
	C. ARCHITRAVE.						
	Tenia	..	2	..	....	11	
	Conge	..	2	..	....	9	
	Fascia	..	8	..	....	9	
		1	-	-			
	D. CAPITAL.						
	Fillet	..	1	..	1	2	
	Conge	..	1	..	1	1	
	Abacus	..	2	..	1	1	
	Quarter Round	..	3	..	1	1	
	Fillet	..	1	..	....	10	
	Conge	..	1	..	....	9	
	Collarin	..	3	..	....	9	
		1	-	-			
	SHAFT.						
Column 14 modules	Astragal	..	1	..	....	11	
	Fillet	..	....	..	....	10	
	Conge	..	1	..	....	9	
	Shaft from Conge to Conge.	11	8	..	{.. 1	9	..
	Conge	..	1	..	1	....	..
		12	-	-			
	E. BASE.						
	Fillet	..	1	..	1	1	
	Torus	..	5	..	1	4	
	Plinth	..	6	..	1	4	
		1	-	-			
	F. CORNICE.						
	Fillet	..	2	..	1	8	..
	Cyma Talon	..	4	..	1	8	..
			6	-			
	DIE.						
Pedestal 4 mod. 8 parts	Die	3	6	..	1	4	
	Conge	..	2	..	1	4	
		3	8	-			
	G. BASE.						
	Fillet	..	1	..	1	6	
	Plinth	..	5	..	1	8	
		-	6	-			
	Total....	22	2	-			

* The dimensions of the canal and flute should not be included in that of the cornice, as the height of the canal is taken from the corona, and that of the flute in the height of the fillet.

☞ The module of the Tuscan order is divided into twelve parts.

MANNER OF DRAWING THE ORDERS.

AFTER having constructed the scale of the modules in such a manner that the total height of the order may be contained in the given height or surface to be employed, draw a line of base for the pedestal. In the middle of this line raise a perpendicular, which will form the axis of the column. Having proceeded thus far, draw the heights of the different parts, as given in the tables, parallel to the base, observing that it is more correct to take the dimensions of the different heights from the base, than to add them successively to each other.

Thus 4 modules and 8 parts (of the Tuscan order for example) should be taken with the compasses, and placed on the perpendicular from the line of base, to obtain the top line of the pedestal; 5 modules and 8 parts for the upper part of the fillet of the base of the column; 17 modules and 8 parts for the top part of the astragal of the column; 18 modules and 8 parts for the top line of the capital; and lastly, 22 modules and 2 parts for the top line of the cornice of the entablature.

MOULDINGS

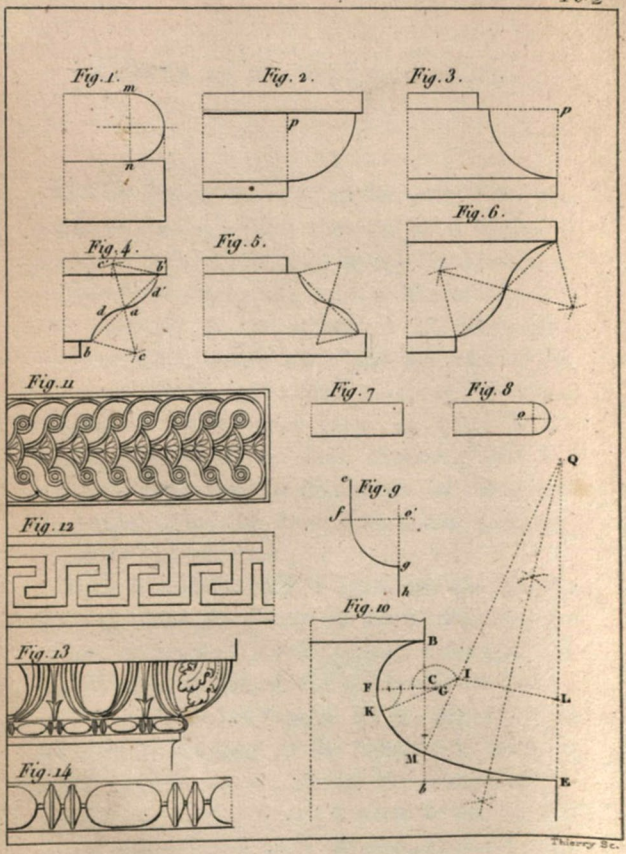
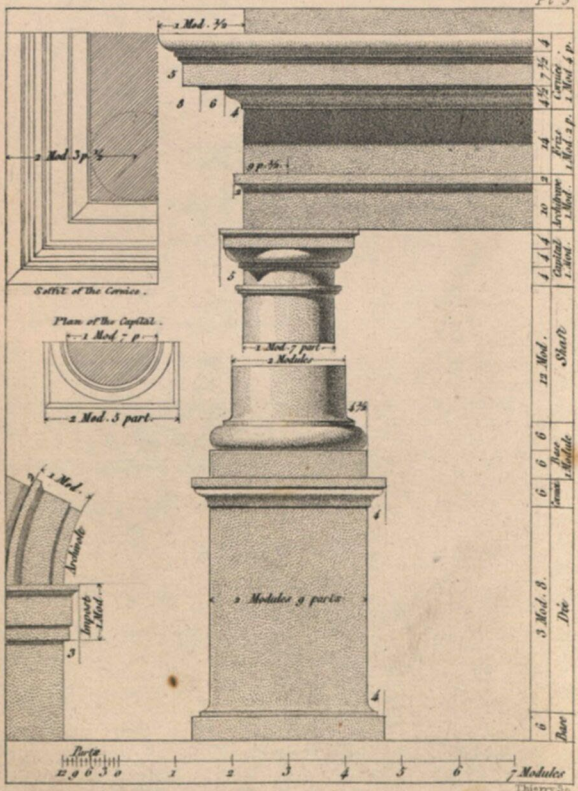


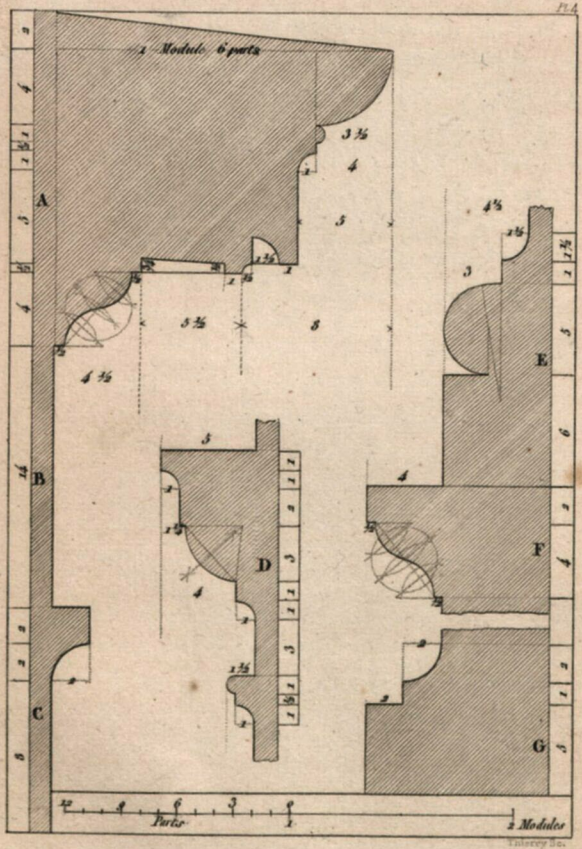
Fig. 1.
m
n
Fig. 2.
p
Fig. 3.
p
Fig. 4.
c
b
d'
d
a
b
c
Fig. 5.
Fig. 6.
Fig. 11
Fig. 7
Fig. 8
e
Fig. 9
c
f
e'
g
h
Fig. 12
Fig. 10
B
C
I
F
G
L
K
M
b
E
Q
Fig. 13
Fig. 14
Thierry Sc.

TUSCAN ORDER.



London Published Per Billington's Architectural Director by John Richardson 91 Royal Exchange. July 1, 1824.

DETAILS OF THE TUSCAN ORDER.



These principal divisions being once determined, it will be easy to find the sub-divisions of each part with the aid of the table. That done, the projections only remain to be determined. These are contained in the same tables in which the dimensions are given from the axis of the column; whilst in the plates 4, 6, 8, 10, 14, and 18, of the details, they are given from the face of the entablature.

The profiles which result ought always to be made on both sides at the same time: the same opening of the compasses being employed in all the parts which are of the same projection, greater correctness will be the result than when they are taken at different times. Plate 2 gives the drawings of the different mouldings which enter into the composition of the members of the different orders.

To describe the torus, fig. 1, divide the line *m n* into two equal parts, which point will form a centre from whence to strike the semicircle, observing that its projection be not greater than that of the face of the plinth. The height of the quarter round, fig. 2, and the projection of the fillet below being determined, raise a perpendicular from its face until it intersects the line above at *p*, which is the centre.

The projection of the lower extremity, and height of the cavetto, fig. 3, being given, draw a line

from the two points till they meet, as at *p*, which gives the point of centre from which to strike the moulding. Having determined the two points, *b*, of the cyma talon, fig. 4, divide it into two equal parts at *a*, which line will serve as base for two equilateral triangles, the summits of which, as at *c*, will be the centres for the segments, *d*.

The cyma reversa, fig. 5, is generally employed below the eye, as in the base of pedestals, and is traced after the same method as fig. 4, which also applies to the cyma recta, fig. 6.

The fillet, fig. 7, is a square member, consisting of right angles.

The astragal, fig. 8, is traced by the same method as fig. 1, except that the face of the part below should have the same projection as the vertical line passing through the centre *o*.

The conge, fig. 9, of the shaft of the column, *e*, and fillet, *h*, is drawn from the point of intersection, *o*, of the two lines *f* and *g*, making *o f* equal to *o g*.

To trace the scotia, fig. 10, draw a vertical line from the face, *B* to *b*, which must be divided into three equal parts; then from the point *C* with the radius, *C B*, describe the arc *B F;* afterwards divide the line *F G* into five parts, four from *F* to *C*, and one from *C* to *G;* from *G* draw the arc *F K*, and from *F* describe a segment, having for its radius two parts, which will determine

the line that passes through the points *K* and *G*. From the fillet *E* raise the perpendicular *E Q;* after which, from *G* strike another arc, having for its radius two parts, which will fix the extremity of the line *I K;* from *I* describe the arc *K M*, and through the points *M I* draw the line *M Q*, making *E L* equal to *M I;* and from the points *I* and *L* raise a vertical line to determine the intersection at *Q*, which will form the centre, from whence to describe the rest of the curve, *M E*.

OF THE ARRANGEMENT OF MOULDINGS.

THE fortunate execution of profiles depends on several rules, which may be reduced to two principal ones. The first fixes the proportion that the projection of the profile ought to have in relation to its height; the second determines the greater or less number of mouldings which the nature of the ordonnance to which they are adapted requires. By the first of these laws the base of a column of any order ought not to exceed the half of its diameter, and its projection should be about one-sixth. The same principles require that the

cornice of the Doric order be two-thirds of its projection in height; whilst the Ionic and Corinthian cornices ought to present a projection equal to their height. The second law admits in a base of the Doric order but three or four mouldings, but in the other orders permits from seven to twelve. According to the same rule, the mouldings ought to be few in number in the entablature of the first order, whilst, on the contrary, they may be multiplied in the Ionic and Corinthian entablatures.

Hence with regard to cornices in general, it is necessary that the divisions or different masses of mouldings of which they are composed be well marked, from whence springs the movement in profiles. In the cornices belonging to the first order two divisions or masses of mouldings are employed; in those of the other orders three at least are employed. The lesser mouldings, such as fillets and astragals, are in all profiles destined to serve as passages to the principal mouldings, and to give them relief. The principal mouldings are, the cyma recta, larmier, quarter round, cavetto, cyma talon, &c. It is essential to the perfection of a profile that each of the mouldings be well expressed, and present the natural form that it ought to have. A quarter round too flat, or a cavetto which is not sufficiently sunk, is defective, because not having the quarter of a circle,

which is their common measure, employed in contrary senses, they do not sufficiently indicate the forms which they ought to express. The same remark applies to the cyma recta and cyma talon, which are each formed by two continued curves, but opposite in their developements, and described by similar radii, in such a manner that one is in projection and the other in retreat. These two mouldings are inverse the one to the other. The modillion, as forming part of the cornice, ought to present in its length or projection double its breadth, while the dentils cannot exceed double their breadth in height; the interdentil, or space which separates them, should not exceed half the breadth of each dentil.

As to the profiles of architraves, archivolts, and chambranles, they ought to be of different proportions, whatever number of mouldings be admitted. The fascias should always exceed each other in their proportions, in such a manner that the uppermost, which is always crowned by some moulding, be of the greatest dimensions, projecting over the next inferior fascia.

But if there are rules for the disposition of profiles with regard to the orders in general, there are also others which relate to the disposition of the profiles combined together. It would be contrary to good taste to place mouldings indistinctly, one near another, because on their association

depends the elegance of profiles. Thus the cyma recta ought always to be immediately surmounted by a fillet or face, and to have an astragal or fillet below it. The cyma talon should be crowned in the same manner; but it ought never to be situated near to a quarter round, whether it be placed above or below. The same moulding separated only by a fillet would have a bad effect; but the cyma talon may be placed upon an even face of any dimensions whatever. This rule is applicable to the quarter round and cavetto. The astragal and fillet are not subjected with such severity to these rules, being employed discretionally. The torus often requires two fillets, and to be environed by even parts, as the socle or plinth: the scotia also requires two fillets. That indispensable member in all cornices, the larmier, which is essential to their preservation and the effect of the profile, ought to occupy the predominant part of their projection; and although we can cite examples even in antiquity where this member is suppressed, this suppression is a real fault, which it is essential to avoid.

A COMPARATIVE TABLE OF THE GENERAL PROPORTIONS OF THE DORIC ORDER,

FROM THE MOST CELEBRATED EDIFICES OF ANTIQUITY,

TOGETHER WITH THOSE ASSIGNED TO IT BY THE MOST EMINENT MODERN MASTERS.

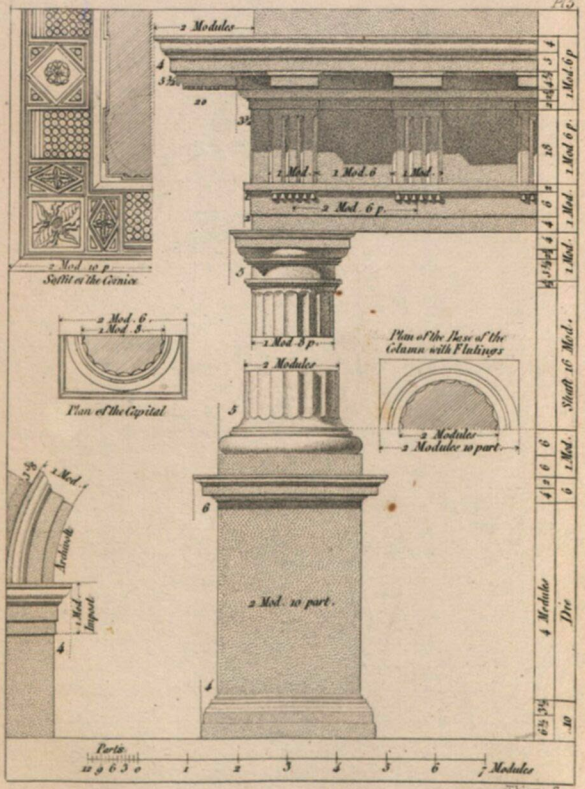
	Great Temple of Pæstum.		*Temple of Apollo, in the Isle of Delos.*		*Temple of Theseus, at Athens.*		*Exterior Portico of the Temple of Minerva, at Athens.*		*Portico of Philip King of Macedonia, in the Isle of Delos.*		*Discovered at Albano, near Rome.*		*Theatre of Marcellus, at Rome.*		*Thermæ of Dioclesian, at Rome.*		*PALLADIO.*		*SCAMOZZI.*		*VIOLA.*		*PHILIBERT DE LORME.*		*VIGNOLA. Mutule.*		*VIGNOLA. Denticulated.*	
	Height of the Members.	Projection from the axis of the Columns.	Height of the Members.	Projection from the axis of the Columns.	Height of the Members.	Projection from the axis of the Columns.	Height of the Members.	Projection from the axis of the Columns.	Height of the Members.	Projection from the axis of the Columns.	Height of the Members.	Projection from the axis of the Columns.	Height of the Members.	Projection from the axis of the Columns.	Height of the Members.	Projection from the axis of the Columns.	Height of the Members.	Projection from the axis of the Columns.	Height of the Members.	Projection from the axis of the Columns.	Height of the Members.	Projection from the axis of the Columns.	Height of the Members.	Projection from the axis of the Columns.	Height of the Members.	Projection from the axis of the Columns.
	Modules. Parts. Fractions.	Modules. Parts. Fractions.	Modules. Parts. Fractions.	Modules. Parts. Fractions.	Modules. Parts. Fractions.	Modules. Parts. Fractions.	Modules. Parts. Fractions.	Modules. Parts. Fractions.	Modules. Parts. Fractions.	Modules. Parts. Fractions.	Modules. Parts. Fractions.	Modules. Parts. Fractions.	Modules. Parts. Fractions.	Modules. Parts. Fractions.	Modules. Parts. Fractions.	Modules. Parts. Fractions.	Modules. Parts. Fractions.	Modules. Parts. Fractions.	Modules. Parts. Fractions.	Modules. Parts. Fractions.	Modules. Parts. Fractions.	Modules. Parts. Fractions.	Modules. Parts. Fractions.	Modules. Parts. Fractions.	Modules. Parts. Fractions.	Modules. Parts. Fractions.
Entablature — Cornice	.. 28 ..	1 23 ..	1 7 ..	2 3 ..	.. 25 ..	2 4 ..	.. 26 ..	1 26 ..	.. 25 ..	1 28 ..	1 5 ..	2 21 ..	1 6 ..	2 25 ..	1 16 ..	2 13 ..	1 8 ..	2 16 ..	1 17 ..	2 20 ..	1 10 ..	2 15 ..	1 10 ..	2 6 ..	1 15 ..	2 25 ..	1 15 ..	2 25 ..
Entablature — Frieze	1 2 ..	.... 20 ..	1 7 ..	.... 29 ..	1 25 ..	.... 29 ..	1 19 ..	.... 28 ..	1 14 ..	.... 28 ..	1 15 ..	1 3 ..	1 16 ..	.... 27 ..	1 15 ..	.... 27 ..	1 15 ..	.... 29 ..	1 15 ..	.... 28 ..	1 15 ..	.... 29 ..	1 15 ..	.... 28 ..	1 13 ..	.... 26 ..	1 13 ..	.... 26 ..
Entablature — Architrave	1 11 ..	.... 23 ..	1 20 ..	1	1 20 ..	1 2 ..	1 14 ..	1	1 9 ..	.... 28 ..	1 1 ..	1 4 ..	1 1 ..	.... 27 ..	1 2 ..	1 1 ..	1 1 ..	1 1 ..	1 5 ..	1 1 ..	1 1 ..	1 1 ..	1 1 ..	1 1 ..	1 1 ..	1 1 ..	1 1 ..	1 1 ..
	3 12 -	- - -	4 4 ½	- - -	4 11 -	- - -	4 - -	- - -	3 18 -	- - -	3 20 -	- - -	3 23 ½	- - -	4 3 -	- - -	3 23 -	- - -	4 7 -	- - -	3 25 -	- - -	3 25 -	- - -	4 - -	- - -	4 - -	- - -
Column — Capital	1 2 ..	1 6 ..	1 3 ..	1 5 ..	1	1 4 ..	.. 28 ..	1 2 ..	.. 21 ½	1 1 ½	1	1 6 ..	1 2 ..	1 8 ..	1	1 9 ..	1	1 9 ..	1	1 5 ..	1	1 8 ..	1	1 10 ..	1	1 7 ½	1	1 8 ½
Column — Shaft	7 12 ½	{.. 20 .. / 1 .. ..}	9 22 ..	{.. 22 .. / 1 .. ..}	10	{.. 23 .. / 1 .. ..}	10 2 ..	{.. 23 .. / 1 .. ..}	11 28 ½	{.. 25 .. / 1 .. ..}	14	{.. 26 .. / 1 .. ..}	14 15 ..	{.. 23 .. / 1 .. ..}	15	{.. 25 .. / 1 .. ..}	14	1 9 ..	15	1 12 ..	14	1 11 ..	14	1 11 ½	14	1 12 ..	14	1 12 ..
Column — Base	.. .. ..	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....
Height of the Column and Entablature	8 15 -	- - -	10 25 -	- - -	11 - -	- - -	11 - -	- - -	12 20 -	- - -	15 - -	- - -	15 18 -	- - -	16 - -	- - -	16 - -	- - -	17 - -	- - -	16 - -	- - -	16 - -	- - -	16 - -	- - -	16 - -	- - -
	11 27 -	- - -	14 29 ½	- - -	15 11 -	- - -	15 - -	- - -	16 8 -	- - -	18 20 -	- - -	19 11 ½	- - -	20 3 -	- - -	19 23 -	- - -	21 7 -	- - -	19 25 -	- - -	19 25 -	- - -	20 - -	- - -	20 - -	- - -
Pedestal — Cornice	.. .. ..	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.. 20 ..	1 26 ..	.. 22 ..	1 27 ..	....	....	....	....	....	....	.. 15 ..	1 27 ..
Pedestal — Die	.. .. ..	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	4 20 ..	1 16 ..	2 8 ..	1 12 ..	....	....	....	....	....	....	4	1 12 ..
Pedestal — Base	.. .. ..	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1 9 ½	1 26 ..	1 15 ..	1 26 ½	....	....	....	....	....	....	25	1 23 ..
	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	6 19 ½	- - -	4 16 ½	- - -	- - -	- - -	- - -	- - -	- - -	- - -	5 10 ..	- - -
	Height of Members.	From face of Arcades.	Height of Members.	From face of Arcades.	Height of Members.	From face of Arcades.	Height of Members.	From face of Arcades.	Height of Members.	From face of Arcades.	Height of Members.	From face of Arcades.	Height of Members.	From face of Arcades.	Height of Members.	From face of Arcades.	Height of Members.	From face of Arcades.	Height of Members.	From face of Arcades.	Height of Members.	From face of Arcades.	Height of Members.	From face of Arcades.	Height of Members.	From face of Arcades.	Height of Members.	From face of Arcades.
Impost	.. .. ..	....	....	....	....	....	....	....	....	....	....	....	1 9 ½	.... 15 ..	....	....	1 8 ..	.... 15 ..	.. 28 ..	.... 11 ..	....	....	....	....	....	....	1 .. ½	.... 10 ..
Archivolt	.. .. ..	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.. 25 ½	.... 6 ..	.. 27 ..	.... 5 ..	....	....	....	....	....	....	1	.... 9 ..
Key of Arcades without Pedestals	.. .. ..	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1 15 ..	....	1 15 ..	....	....	....	....	....	....	....	....	....
Key of Arcades with Pedestals	.. .. ..	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1 15 ..	....	1 22 ½	....	....	....	....	....	....	....	....	....
	Height.	Width.	Height.	Width.	Height.	Width.	Height.	Width.	Height.	Width.	Height.	Width.	Height.	Width.	Height.	Width.	Height.	Width.	Height.	Width.	Height.	Width.	Height.	Width.	Height.	Width.	Height.	Width.
Intercolumniations, from axis to axis	.. .. ..	4 10 ..	....	4 25 ..	....	5 6 ..	....	4 20 ..	....	7 5 ..	....	....	....	10 2 ½	....	....	....	7 15 ..	....	{5 .. .. / 7 15 ..}	....	....	....	....	....	....	7 15 ..	....
Columns of Arcades without Pedestals, from axis to axis	.. .. ..	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	12 15 ..	....	....	....	....	....	....	10	....
Apertures of Arcades without Pedestals	.. .. ..	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	16 15 ..	8 11 ..	....	....	....	....	....	....	14	7 .. ..
Columns of Arcades with Pedestals, from axis to axis	.. .. ..	....	....	....	....	....	....	....	....	....	....	....	13 25 ½	5 25 ..	....	....	17	15	....	15	....	....	....	....	....	....	....	15 .. ..
Apertures of Arcades with Pedestals	.. .. ..	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	22 4 ½	11 18 ..	19 24 ..	10 15 ..	....	....	....	....	....	....	20	10 .. ..

The height given by Palladio to the Doric column is 15 modules when employed without base, 16 modules with base, and 17 modules when placed upon a pedestal.

Scamozzi has placed a socle under the bases of the columns of arcades without pedestals, of this order, 1 module in height, and 1 module and 15 parts in projection from the axis of the column. And this point of centre for describing the semicircular head of the arcades adapted to each of the orders is, for the Tuscan 10, and for the other orders 15 parts, above the impost.

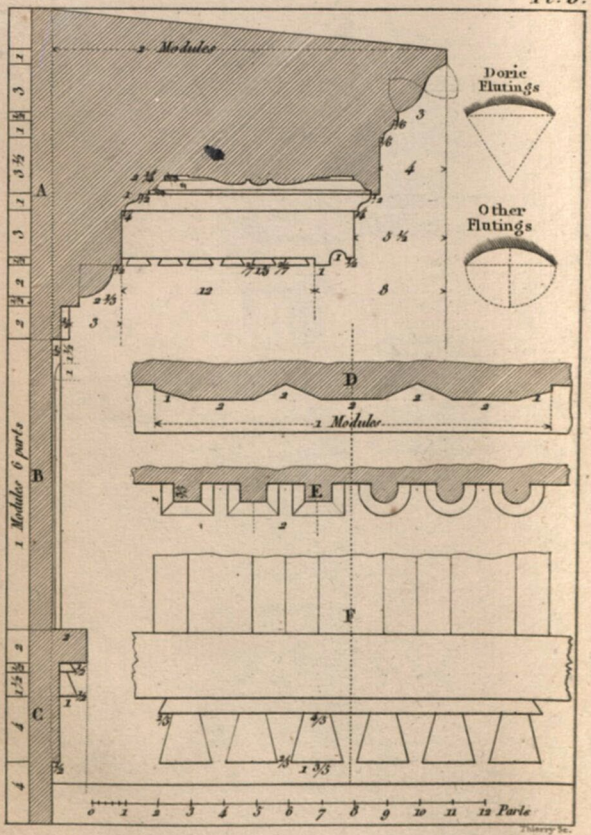
☞ The module employed in this table is divided into thirty parts.

MUTULE DORIC ORDER.

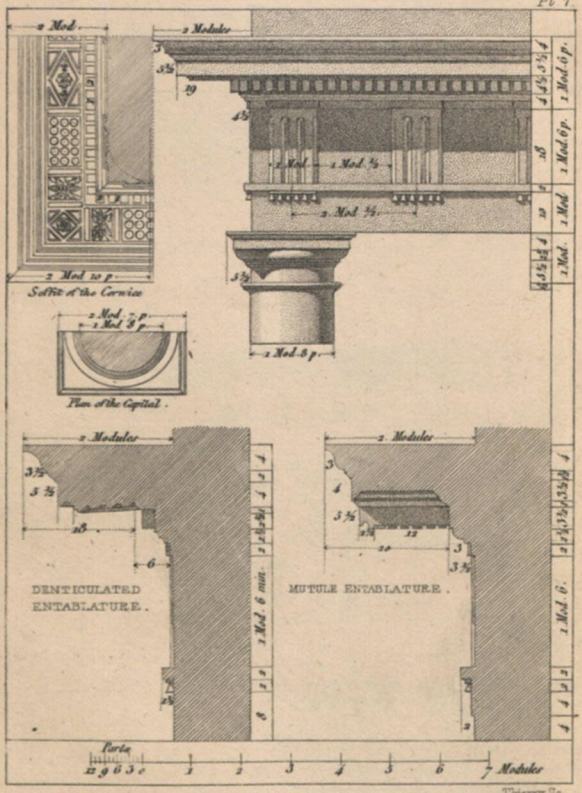


DETAILS OF THE MUTULE DORIC ORDER.

Pl. 6.



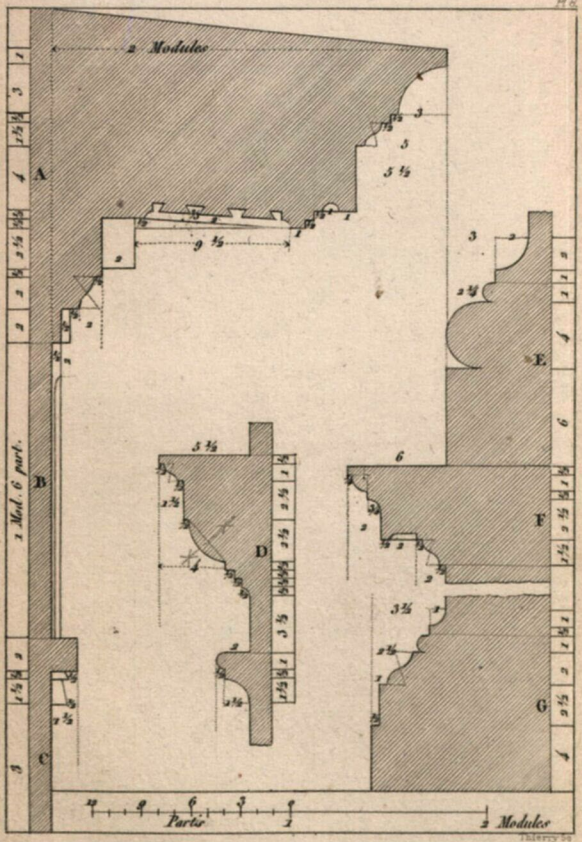
DENTICULATED DORIC ORDER.



Thierry Sc.

London Published For Billington's Architectural Treatise by John Richardson 91 Royal Exchange July 1. 1829.

DETAILS OF THE DENTICULATED DORIC ORDER



MUTULE AND DENTICULATED DORIC ENTABLATURES OF VIGNOLA,

AND THE COLUMN AND PEDESTAL COMMON TO BOTH;

TOGETHER WITH THE NAMES AND DETAILED PROPORTIONS OF THE MEMBERS AND MOULDINGS OF THE TWO ENTABLATURES, AS ALSO OF THOSE OF THE COLUMN AND PEDESTAL.

MUTULE DORIC ENTABLATURE.

PLATES 5 & 6.

		Heights. Modules.	Heights. Parts or Minutes.	Heights. Fractions	Projections from axis of Columns. Modules	Projections from axis of Columns. Parts or Minutes.	Projections from axis of Columns. Fractions
Entablature 4 modules.	**A. CORNICE.**						
	Fillet	..	1	..	2	10	..
	Cyma Recta	..	3	..	2	7	..
	Fillet	..	....	..	2	7	..
	Cyma Talon	..	1	..	2	6	..
	Corona	..	3	..	2	6	..
	Cyma Talon	..	1	..	2	5	..
	Mutule	..	3	..	2	4	..
	*Canal	..	....	..	2	4	..
	Drop of the Mutule	..	....	..	2	2	..
	Quarter Round	..	2	..	1	1	..
	Fillet	..	....	..	....	11	..
	Capital of the Triglyph	..	2	..	....	11	..
		1	6	-			
	B. FRIEZE.						
	Triglyph	1	6	..	....	10	..
	Metope	1	6	..	....	10	..
		1	6	-			
	C. ARCHITRAVE.						
	Tenia	..	2	..	1	....	..
	Capital of the Drops	..	....	..	....	11	..
	Drops	..	1	..	....	11	..
	First Fascia	..	6	..	....	10	..
	Second Fascia	..	4	..	....	10	..
		1	-	-			

D. Plan of a Triglyph on a double scale.

E. Plan of round and square Drops.

F. Elevation of a Triglyph and Drops.

* The height of the canal is included in that of the mutule.

DENTICULATED DORIC ENTABLATURE.

PLATES 7 & 8.

		Heights. Modules.	Heights. Parts or Minutes.	Heights. Fractions	Projections from axis of Columns. Modules	Projections from axis of Columns. Parts or Minutes.	Projections from axis of Columns. Fractions
Entablature 4 modules.	**A. CORNICE.**						
	Fillet	..	1	..	2	10	..
	Cavetto	..	3	..	2	7	..
	Fillet	..	....	..	2	6	..
	Cyma Talon	..	1	..	2	6	..
	Corona	..	4	..	2	4	..
	*Canal	..	....	..	2	3	..
	Fillet	..	....	..	2	2	..
	Drops under the Corona	..	....	..	2	....	..
	*Dentil	..	3	..	1	3	..
	Fillet	..	....	..	1	1	..
	Cyma Talon	..	2	..	1	....	..
	Capital of the Triglyph	..	2	..	....	11	..
		1	6	-			
	B. FRIEZE.						
	†Triglyph	1	6	..	....	10	..
	†Metope	1	6	..	....	10	..
		1	6	-			
	C. ARCHITRAVE.						
	Tenia	..	2	..	....	11	..
	‡Capital of the Drops	..	....	..	....	11	..
	‡Drops	..	1	..	....	11	..
	Fascia	..	10	..	....	10	..
		1	-	-			

* The canal and dentil take each half a part in height from the soffit of the corona. See plate 8.

† Only one of these two parts should be taken for the height of the frieze.

‡ The capital of the drops, and the drops, are included in the fascia.

COLUMN AND PEDESTAL

Common to the two Entablatures.

PLATES 5, 7, & 8.

		Heights. Modules.	Heights. Parts or Minutes.	Heights. Fractions	Projections from axis of Columns. Modules	Projections from axis of Columns. Parts or Minutes.	Projections from axis of Columns. Fractions
Column 16 modules.	**D. CAPITAL.**						
	Fillet	..	....	..	1	3	..
	Cyma Talon	..	1	..	1	3	..
	Abacus	..	2	..	1	2	..
	Quarter Round	..	2	..	1	1	..
	Three Fillets	..	1	..	....	11	..
	Collarin	..	4	..	....	10	..
		1	-	-			
	SHAFT.						
	Astragal	..	1	..	1	....	..
	Fillet	..	....	..	....	11	..
	Conge	..	1	..	....	10	..
	Shaft between Conges	13	7	..	1	10	..
	Conge	..	2	..	1	....	..
		14	-	-			
	E. BASE.						
	Fillet	..	....	..	1	2	..
	Astragal	..	1	..	1	2	..
	Torus	..	4	..	1	5	..
	Plinth	..	6	..	1	5	..
		1	-	-			
	F. CORNICE.						
	Fillet	..	....	..	1	11	..
	Quarter Round	..	1	..	1	10	..
	Fillet	..	....	..	1	9	..
	Corona	..	2	..	1	9	..
	Cyma Talon	..	1	..	1	6	..
		-	6	-			
Pedestal 5 mod. 4 parts.	**DIE.**						
	Die	3	11	..	1	5	..
	Conge	..	1	..	1	5	..
		4	-	-			
	G. BASE.						
	Fillet	..	....	..	1	6	..
	Astragal	..	1	..	1	6	..
	Cyma Reversa	..	2	..	1	7	..
	First Plinth	..	2	..	1	9	..
	Second Plinth	..	4	..	1	9	..
		-	10	-			
	Total..	25	4	-			

☞ The module employed in this table is divided into twelve parts.

the origin of these said orders, and shall afterwards pass to the examination of each of them, by the most certain rules that the ruins of antiquity have furnished us. From which research and comparison will result a degree of most useful knowledge, which will enable us to execute them with more certainty of success.

Every thing proves to us the high antiquity of the first of the orders in architecture. It may be looked upon as the generating principle of all proportion in this art, of which it is easy to be convinced by attentively considering that the other orders, namely, the Ionic and Corinthian, have the same principal members as the Doric. All three have a shaft, capital, architrave, frieze, and cornice. They only differ from each other by the greater or less number of their parts, and the delicateness and magnificence which respectively belongs to them. The Doric, however, amongst the ancients, was never employed with a base, although the moderns have constantly accorded one to each of the three orders.

I have promised, before fixing the origin of each order, to present the account that Vitruvius has given us. This author, speaking of the Doric order, says, "Dorus, son of Helenus and of the nymph Optice, king of Achaia and of all Peloponesus, having once caused a temple to be built to Juno, in the ancient city of Argos, this temple

was of the style that we call the Doric: afterwards this order was employed in all the other cities of Achaia, without having as yet any established rule for the proportions of its architecture. But as they, the Greeks, were unacquainted with the proportion it was necessary to give to columns, they sought the means of making them sufficiently strong to sustain the weight of the edifice, and to render them agreeable to the view. For that end they took the measure of the foot of a man, which is the sixth part of his height, after which measure they formed their columns, in such a manner that, in proportion to this measure, which they gave to the thickness of the foot of the column, they made it six times that height, including the capital: and thus the Doric column, which was at first employed in the edifices, had the proportion, force, and beauty of the body of man."

The opinion of Vitruvius, on the origin of the Doric order, does not appear to me to be more exact than the rules which he gives relative to this order; and without directly attacking the fable which he relates, I will more particularly confine myself to the proportions which he prescribes, because they have an essential relation with the subject under examination. He supposes that in the origin there was given to the columns of this order six diameters for its height; that is to say, six times its breadth. But it is easy to dis-

cover, in examining the columns of this order, which at present exist at the temple of Corinth, that they have only four diameters in height. It is at least surprising that this learned architect, in treating on the orders, has not distinguished the different proportions under twelve modules, or six diameters; and the surprise is not lessened when we consider that he lived during the time of Augustus, and had under his eyes many temples and other monuments of the Doric order. Examples of this order may be found in Greece and in Italy, but particularly in the city of Posidonia, where temples exist of a Doric ordonnance, which have their columns only eight modules and one-third.

Without recurring to the fable of Vitruvius, in order to fix the precise epoch of the origin of the Doric order, it appears much more conformable to probability, that, as the principle of architecture, it takes its date from the earliest state of society. This assertion will be shown to be true, if we observe the progressive march of this order. We see it successively disembarrass itself of the extreme heaviness to which it was subjected in its first essays, and lighten itself, from century to century, in its general, and also in the particular, proportion of each of its members.

And this reflection will appear still more just, when we consider that perfection is the last thing attained, both in nature and art. Man arrives at

maturity but by degrees, passing through the stages of infancy and youth to manhood. The same remark is applicable to the Doric order, which, in its origin, was shapeless and rude, but which gradually emerged from its rude state of disproportion, and acquired those proportions which rendered it at the same time lighter to the view, and more relatively useful.

Examination will prove the truth of the above remarks, for which purpose the different antique monuments will serve us as examples. We see that this order at its origin presented a considerable diameter compared with its height, from which resulted an inevitable heaviness, a fault which study and experience taught them how to avoid. D. le Roy, in his researches of the ancient edifices of Greece, marks three well-distinguished ages in this order, and these ages are relative to the diameters of the columns compared to their heights. This learned architect has also observed that the columns of the Greek edifices did not offer to him, in their appearance, a heaviness as great in comparison as the relation of the diameter to the height led him to expect. This effect results, as he has assured us, from the great diminution of the shaft of the column, and from the particular construction of its capital. This interesting observation does not injure the assertion before made of the

progression of this order to its third age, and ultimate perfection.

The first age, or infancy of the Doric order, is that during which it was extremely shortened; at which time the columns were without flutings, the capital very simple, and without astragal, having for an echinus, or quarter round, only a piece roughly cut in talus, bearing the abacus, which itself is but an even face. The projection of the capital did not exceed the foot of the column. Such is the Doric order in a place called Thoricion, ten leagues from Athens; and this fault is still more sensible at the temple of Corinth. The columns of the first have three feet, five inches, and nine lines in diameter; their height is fourteen feet, eleven inches, and eight lines, which gives but four diameters and a half; the second is six feet five inches in diameter, and twenty-four feet, seven inches, and two lines in height, which is not quite four diameters. These two examples are sufficient to fix the proportion of this order during its first age.

Examples of the second age may be found in the proportions observed in the monuments erected about the time of Pericles, and during his reign. The columns are higher, the parts of which they are composed are multiplied, and consequently the diameters less considerable, and the propor-

tions better. This observation proves that the epoch of the first edifices of the Doric order must be placed in the highest antiquity; for the temples of Theseus and Minerva, in the citadel at Athens, were constructed four hundred and eighty years before the birth of Christ, and twenty-five years before Pericles commanded the armies of the republic of Athens, of which he was chief. If, therefore, from this time, which may be considered as the second age of the Doric order, the edifices were already constructed according to proportions which were not so heavy as the former, it is certain that the artists could not have arrived at this degree of judgment, but by having acquired a knowledge of the faults of their predecessors, from which observations they derived the most important advantages.

Thus we see that the columns of the frontispiece of the temple of Theseus have a diameter of three feet six inches, and an elevation of eighteen feet, eight inches, and eight lines; it had then already risen to five diameters and a half. It is unnecessary to refer to the columns of the temple of Minerva, or those of the frontispiece of the Propylea, as they present the same proportions between the diameter and the height of their columns, and serve among other examples to determine the second age of the Doric order.

It may not be amiss to advise those who apply

themselves to the art, to consider with attention the Propylea, which may be found in the interesting works on the antiquities of Greece. They will there see the relations that the ancients observed between a great and a lesser order, when they combined them together. The ordonnance of the lesser rises to eight-ninths of the height of the column of the greater order. The entablature of the lesser order, which is also Doric, is complete, and presents the same members, namely, architrave, frieze, and cornice.

The third age of the Doric order may be fixed near to the time of Augustus. The temple of Minerva, which adulation dedicated to this emperor, is at least, according to Le Roy, the most ancient monument which can be cited of this third kind. "In the portico of this edifice may be remarked," says he, "the source of all the alterations that were afterwards made at Rome in the proportions of the Doric order, which was employed in Greece at the time of Pericles."

The height of the order, in this edifice, is twenty-six feet, three inches, and ten lines; the diameter three feet, eleven inches, and eleven lines; from whence results the proportion of six diameters and a half, or thirteen modules, two parts and a half; in which example the Doric order may be seen approaching to perfection. But the artist of this edifice has, in avoiding the faults of those

who had preceded him, followed certain rules which were afterwards justly reformed by experience. The frontispiece of this temple is tetrastyle, or of three intercolumniations; that in the centre being ten feet, eight inches, and four lines, and those at the two extremities only four feet, ten inches, and ten lines. This manner of distribution will always have a less effect than that wherein the columns are at equal distances. If, however, this order appears to lose any thing by the defect just spoken of, there are other points which, in a great measure, redeem that loss. The entablature has seven feet, ten inches, and one line, in height, of which the architrave has two feet, ten inches, and nine lines, and the frieze three feet, one inch, and five lines; the overhanging or projection of the architrave beyond the upper diameter of the columns is less than that in the more ancient edifices; and likewise the triglyphs are in projection upon it. These fortunate improvements belong to the third age, the character of which may be easily distinguished by what has been here remarked.

It is indeed evident that the Doric order has experienced numerous alterations during the same age, exhibiting at various times different expressions of character, of which the fragments of this order, from the ruins of Italy, furnish us with proofs. In Italy the Doric was brought to its maturity, of which the example found at Albano

may be proposed as one of the most striking proofs. The height of the column is seven diameters and a half, or fifteen modules; the capital of this column has a collarin, and its abacus is crowned with a fillet and cyma talon. The architrave is one module, the frieze one module and a half, and the cornice a module and one-fifth. With the exception of the defect in the architrave, this example may undoubtedly be pronounced a master-piece. It appears to have served as the model for Vignola's mutule Doric, and is cited in the present instance in preference to the theatre of Marcellus, or the Thermæ of Dioclesian, the composition of which appears inferior. It is true that the order of the first of the two last-mentioned edifices has been generally and deservedly esteemed; but that of the latter has its capital soft and effeminately profiled; its cornice, which is too high, is composed of too many members, and is of a proportion that disfigures the essential character of the order. A correct engraving of the small mausoleum which is situated in the vicinity of Terracina is worthy of the careful examination of artists. The columns, it is true, have but seven diameters in height; but there is a beauty and largeness of division in the members of this edifice.

Before terminating these remarks on the origin and progress of the Doric order, it may not be

amiss to advert to the different relations which the antique orders present between the particular height of their columns and that of their entablatures. If the ruins of the first age of this order enable us to judge perfectly of the manner employed by the ancient architects with regard to the entablatures of their edifices, perhaps it may be as easy to assign the three ages from a consideration of the entablatures, as it has been from that of the columns. It may be remarked in general, from the observations made on well-known edifices, that these last members have generally been stronger and heavier at the time when the diameters of the columns were greater in comparison to their height. But if it is not possible to specify what has been the method of the first architects in the construction of the entablatures of the first age, it is at least possible to conjecture it from the manner of the two following ages, where the method appears as different as it is with relation to the proportion of the columns. Some of the examples of the second and third age, showing the proportions observed during both of these epochs, between the height of the column and that of the entablature, may be cited in support of these remarks.

At the temple of Theseus, at Athens, one of the most ancient edifices of which the entablature is preserved, the height of the order is eighteen

feet, six inches, and nine lines; the diameter is three feet, five inches, and eight lines; the height of the entablature six feet, six inches, and five lines, or more than one-third of that of the column. The order of the temple of Minerva, in the same city, is thirty-three feet, nine inches, and ten lines, in height, the diameter of its columns being six feet and eleven lines, and its entablature twelve feet ten inches high. It is easy to perceive, that although the first is very heavy, yet it is surpassed in weight by the second.

It appears that the artists of the second age have themselves been sensible of this fault, because in the edifice of the Propylea, constructed in the same century, but nearly fifty years later, the columns of the portico are twenty-nine feet one line, and the entablature is nine feet and seven lines, which is less than a third of the height of the column. In the lesser order also, which forms the peristyle at its sides, the columns are nineteen feet three inches in height, and the entablature six feet, one inch, and nine lines; the heaviness alluded to being corrected by the artist in both examples of this order. According as the order approached its more perfect proportions, this part may be seen sensibly lightened. The temple of Minerva and Augustus, which has been before cited, fixes the epoch of the passage of the Doric order to its third age. The columns of this tem-

ple have twenty-six feet, three inches, and ten lines, and the entablature seven feet, ten inches, and five lines, or less than a third of the column.

The changes which form the third age of the Doric order taking place more particularly in the Roman empire, and being effected by the united talents of Greece and Rome, the edifices erected during this auspicious period shall be compared with those erected in Greece during the second age.

The columns of the theatre of Marcellus, at Rome, have nearly sixteen modules, or eight diameters, in height; their entablature is nearly four modules, which establishes its height at almost one-fourth of that of the column; and this proportion of one-fourth of the column is still more precise at the Thermæ of Dioclesian. This rule is also observed with as much fidelity in the column belonging to the fragment found at Albano, which has but fifteen modules in height, and the entablature three and two-thirds, which also approaches to one-fourth.

It is useless to cite a greater number of examples to confirm an acknowledged truth. The columns of the different edifices executed under the first emperors, as those of the Coloseum, (the amphitheatre erected by Titus,) depart little from the proportion of the three above-mentioned.

From these examples it must be concluded that sixteen modules is the greatest elevation which can

be given for the proportion of the Doric column, and that its entablature ought to be one-fourth of its height. Under this proportion the order appears rather heavy, but beyond this alters and destroys its character.

The most celebrated architects since the restoration of the arts have all ruled their system of ordonnance by the proportions of these examples, and their works are more or less esteemed according as they adhered more strictly to the spirit of the proportions found in the best examples which Italy offered them.

Having said thus much on the subject of the progress of the Doric order, I now proceed to lay before the reader comparative tables of the proportions found in different examples of antiquity, and of those observed by the most approved modern masters. In the mean time, however, I must beg the reader's attention to the following remarks upon the nature of their application, as also upon the application of rules in general. Unlike those arts in which the rules are imperative, architecture admits of modifications in all its orders, which are governed by the character of the edifice, the situation of the site, &c. as is fully proved by the various examples of antiquity quoted in the following tables.

If the proportions of architecture could be reduced to a determinate calculation, architecture

would cease to be an art of invention and taste, and become nothing more than a mechanical art, in which every thing is subjected to rigorous rules. Though by a strict observance of the rules and proportions of the ancients we might succeed in producing examples similar in their abstract form, yet without the attendant circumstances which had governed the artist in his choice of proportions and ordonnance, the application of such proportions and ordonnance would be a breach of the fundamental law of architecture, which demands that they shall be governed by the character and object of the edifice. The principles of calculation being absolute, can never be applied to architecture as the sole governing power. Such an application, by enslaving the artist to a system unchanged by circumstance, and absolute in its rules, would destroy at once the principle of invention, and give a death-blow to the powers of the art. The orders of architecture, and the rules which govern the proportions of their details, are means only whereby an expression of character is given to an edifice; the judicious application of which characterizes genius, and distinguishes the man of talent from the mere copyist. Such of the constituent parts of architecture as apparently rest on a system of the most fixed proportions, and between which a constant and uniform relation exists, though unvarying in their regular and

symmetrical organization, are nevertheless modified in their application according to the expression of character which is required. Architecture does not merely permit, but demands a latitude in the application of its parts, which is governed by the general intention. A comparison of the different monuments of antiquity will prove the truth of these remarks, and render them more striking by exhibiting the fact. Whilst we discover in their works a uniformity of principles, we shall also find that variety in the details of the constituent parts which has been alluded to, and from which examples may be derived that knowledge of general expression, and judgment in distribution, which will serve to restrain the digressions of imagination within proper bounds, without enslaving the efforts of genius.

Vignola's Doric entablature is of two kinds; the one is called mutule, and the other denticulated. The first is taken from the antiquities found in Italy, and is ornamented with mutules, which are a kind of bracket, or projecting larmiers, which serve to crown the triglyphs. The frieze is decorated with triglyphs of a module in breadth, subdivided into triangular flutes and half flutes: they should be placed directly over the columns, and divided from each other by a space called metope, which is equal to the height of the frieze. The shaft of the column is sometimes ornamented with

flutings, or portions of a circle, to the number of twenty, which in meeting form a sharp angle.

The second Doric entablature is called denticulated, because its cornice is ornamented with dentils, it being taken from the theatre of Marcellus, at Rome. It differs from the mutule in its architrave, which has but one fascia; and in its cornice, in the lower part of which is placed a cyma talon, whilst the mutule has a quarter round; and in the upper part is placed a cavetto, whilst the other has a cyma recta. As the column and pedestal are the same in each of these two examples, to prevent repetition, their details will be given in the table and in plate 8, as being common to both.

THE IONIC ORDER.

I NOW proceed to the consideration of the Ionic, which is the second of the orders. It will easily be perceived that this kind of architecture has not been subject to the same variations in its principal divisions, because the art had made progress in the proportions of the first of the orders, and they served as a principle to the ancients in the construction of the two last.

In supporting whatever may have been advanced in this work, I have as far as possible endeavoured to avoid substituting conjecture for truth; and in attempting to establish a principle, I have not rested my proofs on the merit of personal knowledge, but have appealed to the testimony of those who have merited public esteem by the productions of their genius. I shall endeavour to follow the same rule in my remarks upon the origin of the Ionic order, upon which subject what has been said by Freart de Chambray, an author who is often and justly cited in the course of this work,

A COMPARATIVE TABLE OF THE GENERAL PROPORTIONS OF THE IONIC ORDER,

FROM THE MOST CELEBRATED EDIFICES OF ANTIQUITY,

TOGETHER WITH THOSE ASSIGNED TO IT BY THE MOST EMINENT MODERN MASTERS.

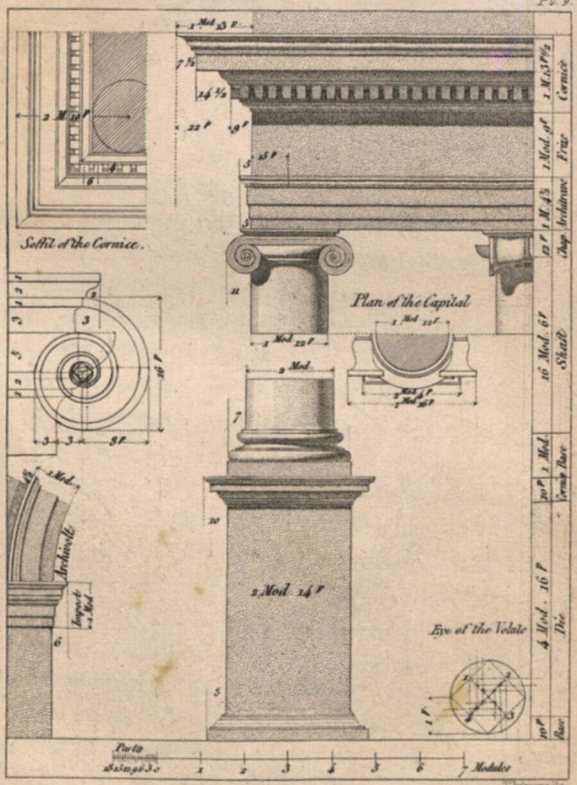
	Temple on the Ilissus, at Athens.				*Temple of Erectheus, at Athens.*				*Temple of Minerva Polias, at Athens.*				*Temple of Fortuna Virilis, at Rome.*				*Theatre of Marcellus, at Rome.*				*Colosseum, at Rome.*				*Thermæ of Diocletian, at Rome.*				*PALLADIO.*				*SCAMOZZI.*				*ALBERTI.*				*SERLIO.*				*VIGNOLA.*			
	Height of the Members.			Projection from the axis of the Columns.					Height of the Members.			Projection from the axis of the Columns.					Height of the Members.			Projection from the axis of the Columns.					Height of the Members.			Projection from the axis of the Columns.					Height of the Members.			Projection from the axis of the Columns.					Height of the Members.			Projection from the axis of the Columns.					Height of the Members.			Projection from the axis of the Columns.			
	Modules.	Parts.	Fractions.	Modules.	Parts.	Fractions.			Modules.	Parts.	Fractions.	Modules.	Parts.	Fractions.			Modules.	Parts.	Fractions.	Modules.	Parts.	Fractions.			Modules.	Parts.	Fractions.	Modules.	Parts.	Fractions.			Modules.	Parts.	Fractions.	Modules.	Parts.	Fractions.			Modules.	Parts.	Fractions.	Modules.	Parts.	Fractions.			Modules.	Parts.	Fractions.	Modules.	Parts.	Fractions.	
Entablature { Cornice	1	2	..	2	11	..			1	7		2	7				2	10		3	..	..			2	6	..	2	18	..			1	16	..	2	18	..			1	16	..	2	10	..			1	22	½	2	16	½	
Frieze	1	19	..	....	28	..			1	18		1	..	..			1	8		....	29	..			1	6	..	1	1	..			..	27	..	....	26	..			..	28	..	....	25	..			1	15	..	....	25	..	
Architrave	1	25	..	1	2	..			1	21		1	7	..			1	13	..	1	7	..			1	4	..	1	7	..			1	6	..	1	5	..			1	5	..	1	1	..			1	7	..	1	3	..	
	4	16	-	-	-	-			4	17	½	-	-	-			4	25	½	-	-	-			3	18	-	-	-	-			3	19	-	-	-	-			3	15	-	-	-	-			2	24	½	-	-	-	
Column.... { Capital	..	27	½	1	1	..			1	13	..	1	..	..			..	21	½	1	7	½			..	19	½	1	8	½			..	19	½	1	6	½			..	18	½	1	9	..			..	20	..	1	6	½	
Shaft	14	2	½	15	25	..			16	22	½	1	25	..			15	10	..	15	26	½			15	23	½	15	9	..			16	10	½	1	..	..			15	26	½	1	25	..			16	10	..	1	25	..	
Base	1	..	..	1	11	..			..	24	½	1	15	..			1	..	..	1	10	½			..	27	½	1	10	..			1	..	..	1	11	..			1	..	..	1	11	..			1	..	..	1	12	..	
	16	-	-	-	-	-			19	-	-	-	-	-			18	-	-	-	-	-			17	9	¼	-	-	-			17	-	-	-	-	-			17	15	-	-	-	-			18	-	-	-	-	-	
Height of the Column and Entablature	20	16	-	-	-	-			23	17	½	-	-	-			21	19	¾	-	-	-			22	25	½	-	-	-			20	18	-	-	-	-			21	19	-	-	-	-			22	15	-	-	-	-	
Volute	1	6	-	1	15	¾			1	5	½	1	15	¾			-	29	-	1	11	¾			-	25	½	1	12	½			-	24	-	1	10	-			-	26	-	1	15	-			-	23	¼	-	26	½	
Pedestal.... { Cornice	..	..	..	....	..	..			..	..	..	....	..	..			..	23	..	2	5	..			..	19	½	1	24	..			..	17	..	....	9	½			..	..	..	....	..	..			..	21	½	1	26	..	
Die	..	..	..	....	..	..			..	..	..	....	..	..			2	3	..	1	13	..			2	12	..	1	11	..			2	20	..	1	10	..			3	5	..	1	11	..			2	24	..	1	24	..	
Base	..	..	..	....	..	..			..	..	..	....	..	..			2	3	..	2	8	½			1	13	..	..	..	..			1	20	..	....	..	..			1	15	½	1	24	..			1	15	½	....	..	..	
	-	-	-	-	-	-			-	-	-	-	-	-			6	-	½	-	-	-			4	21	½	-	-	-			-	-	-	-	-	-			5	9	½	5	3	½			-	-	-	-	-	-	
	Height of Members.			From face of Arcades.					Height of Members.			From face of Arcades.					Height of Members.			From face of Arcades.					Height of Members.			From face of Arcades.					Height of Members.			From face of Arcades.					Height of Members.			From face of Arcades.					Height of Members.			From face of Arcades.			
Impost	..	..	..	....	..	..			..	..	..	....	..	..			..	..	..	....	..	..			1	13	½	....	21	½			..	26	½	....	15	..			....	..	..	....	..	..			1	7	..	....	..	..	
Archivolt	..	..	..	....	..	..			..	..	..	....	..	..			..	..	..	....	..	..			..	..	..	....	..	..			..	29	½	....	5	..			....	..	..	....	..	..			1	26	½	....	5	..	
Key of Arcades without Pedestals	..	..	..	....	..	..			..	..	..	....	..	..			..	..	..	....	..	..			..	..	..	....	..	..			..	..	..	....	..	..			..	..	..	....	..	..			1	15	..	....	..	..	
Key of Arcades with Pedestals	..	..	..	....	..	..			..	..	..	....	..	..			..	..	..	....	..	..			..	..	..	....	..	..			..	..	..	....	..	..			..	..	..	....	..	..			2	..	..	....	..	..	
	Height.			Width.					Height.			Width.					Height.			Width.					Height.			Width.					Height.			Width.					Height.			Width.					Height.			Width.			
Intercolumniations, from axis to axis	..	..	..	6	15	..			..	..	..	5	..	½			..	..	..	7	5	..			..	..	..	....	..	..			..	..	..	....	..	..			..	..	..	....	..	..			..	..	..	6	7	½	
Columns of Arcades without Pedestals, from axis to axis	..	..	..	....	..	..			..	..	..	....	..	..			..	..	..	....	..	..			..	..	..	....	..	..			..	..	..	....	..	..			..	..	..	....	..	..			..	..	..	....	..	..	
Apertures of Arcades without Pedestals	..	..	..	....	..	..			..	..	..	....	..	..			..	..	..	....	..	..			..	..	..	....	..	..			..	..	..	....	..	..			..	..	..	....	..	..			..	..	..	....	..	..	
Columns of Arcades with Pedestals, from axis to axis	..	..	..	....	..	..			..	..	..	....	..	..			..	..	..	....	..	..			..	..	..	....	..	..			..	..	..	12	10	½			..	..	..	15	10	½			..	..	..	....	..	..	
Apertures of Arcades with Pedestals	..	..	..	....	..	..			..	..	..	....	..	..			..	..	..	....	..	..			15	21	½	7	11	½			19	19	½	9	28	½			..	..	..	....	..	..			..	..	..	....	..	..	

The projection of the capitals of the three first examples is taken to the extremity of the abacus, as being the farthest point of the member; for the same reason the projection of those which follow is taken to the extremity of the quarter-round, excepting Scamozzi's, which is taken to a horizontal line drawn from the two extremities of his segmental abacus; and the height given for the capital of each column is taken from the upper part of the astragal of the shaft to the top of the abacus, without regarding the height or projection of the volutes.

N.B. Scamozzi employed a socle under the bases of columns of arcades without pedestals, 1 module in height, and 1 module 14 parts in projection from the axis of the column.

☞ The module employed in this table is divided into thirty parts.

IONIC ORDER.



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appears to me most conclusive. "The first productions of the arts have always been very rare, because it is difficult to invent, but not so difficult to imitate. After the regular buildings and the famous Doric temples appeared, of which Vitruvius and some others have made mention, architecture did not long remain in its infancy: the competition and emulation of the neighbouring people caused it to make great progress in its advance towards perfection. The Ionians were the first competitors of the Dorians in this divine art, and as these people had not had the advantage nor glory of its invention, they endeavoured to enrich it more than its authors had done." To this judicious remark of Chambray's it will not be uninteresting to add the proof of his opinion. History informs us that Hermogenes, of Alabanda, having a great quantity of marble, intended to build a temple to Bacchus; but not having at that time any other models than the Doric order, inspired by his genius, he discovered a manner, without differing sensibly from the rules of this order, of executing it on a new design; and as he was an inhabitant of Caria, of which the Ionians had made themselves the possessors, this manner of building caused the name Ionic to be given to this kind of architecture. No other epoch can be discovered to which the invention of this second order can be assigned.

The praise that Vitruvius gives to the talents of Hermogenes confirms this idea. "His works," says he, "merit to be considered as the source from whence posterity has drawn the best precepts on architecture."

One conjecture, however, might be added, which does not appear improbable. There has been assigned to the Doric order three different ages, founded upon the examples of antiquity; and it has been proved that the Romans have contributed in part to the perfection of this order. But when the first proportions which have been employed in the Ionic order are considered, does it not lead us to believe, that while the Doric, preserving its manner and its style, made sensible progress, that the Ionic order, which contributed to perfect the art in general, aided in perfecting the Doric order in particular?

The first proportion that was given to this order was eight diameters; a proportion so much the more remarkable when, at the time of its origin, the Doric order had scarcely four, which gave to each of these two orders a very distinct character. This is the opinion of Vitruvius, and the antiquities of Greece agree with what he says. But what served further to distinguish the Ionic from the Doric were, the new forms taken by the capital and base, that were added to the Ionic, as also

the alterations made in its entablature, in which the frieze became smooth, and the dentils succeeded the mutules in the cornice.

This second order, in some degree a rival to the first, made great progress. Experience having taught them to raise the Doric order in its proportions, the Ionic also underwent increased improvement. Genius perfected both; the means were multiplied by observation, from whence sprung that variety in the relations of the different orders; and these relations, taken and employed with judgment, became the source of an almost innumerable number of agreeable effects.

But if there remains at present no doubt as to the origin of this order, it is not less essential that the manner in which its proportions and rules progressively advanced to their perfection be marked with the same precision; in doing which, recourse will be had to the examples presented to us in the different antique edifices.

The entablature of the Ionic order employed in the temple on the Ilissus, at Athens, is four modules and sixteen parts in height, and that of the column sixteen modules, which is rather more than three times and a half the height of the entablature, in which the architrave is one module and twenty-five parts in height, the frieze one module and nineteen parts, and the cornice but one module and two parts. This example presents much sim-

plicity, having no other ornaments than the oves of its capital, the flutings in the shaft of its column, and the horizontal flutings that decorate the superior torus of its base.

At the temple of Erectheus the entablature is four modules and seventeen parts and a half in height, and the column eighteen modules, which is less by one-third of a module than four times its height. Nearly all the mouldings of this example are sculptured with ornaments. The architrave of its entablature has three fascias; the frieze is plain; and the cornice, like that of the preceding example, has a strong moulding under the soffit, and included in the height of the corona. The capital has two ranges of mouldings, in addition to those which ordinarily form the spiral contour of the volute, situated between the abacus and quarter round; and the collarin and astragal, under which the flutings of the shaft of the column terminate, are ornamented with sculpture. The base of the columns appears from its form to have served as a type for the one named attic.

The entablature of the temple of Minerva Polias is of the same form and proportion as that of the foregoing example. The column is nineteen modules in height. Its capital, although presenting the same total, has some difference in its proportion, ornaments of its collarin, and form of its astragal.

From this examination of the early ages of the Ionic order, executed in Greece, we shall proceed in the same manner to those afterwards executed at Rome, commencing with that presented at the temple of Fortuna Virilis, which dates its erection from the time of Servius Tullius, one of the first of the Roman kings. The columns of this example are seventeen modules and two parts and a quarter in height, and the entablature four modules and seventeen parts and a half. This example is the first of this order executed at Rome, the entablature of which, although massive in its members and mouldings, possesses more merit than the untutored eye would award to it. Some of the modern masters appear to have taken it for a model, placing the volutes on a parallel line, (those at the two extremities of the temple have each an angular volute,) increasing the height of its frieze, and modifying its architrave and cornice.

In the Ionic order, at the theatre of Marcellus, the superior mouldings of the cornice to the lower part of the corona being decayed, the proportions of the part wanting have been supplied in the table affixed to this article, where this example is given, according to the spirit of the rest of the order. The height of the entablature is four modules and twenty-five parts and two-thirds, and that of the column eighteen modules. The part of the cornice which remains is well proportioned and profiled;

trave is one module and twenty-one parts and a half; the frieze one module and eighteen parts and a half in height; but the cornice is only one module and seven parts and a half. The temple at Rome, where the architrave is one module and eight parts and a half, the frieze is twenty-eight parts and three quarters in height, whilst the cornice is two modules and ten parts and a quarter. In forming this comparison, we may further refer to the proportions of the Ionic order at the theatre of Marcellus. Its columns are eighteen modules in height, and the entablature four modules and twenty-five parts and two-thirds; in which the architrave is one module and thirteen parts, the frieze one module and six parts and two-thirds, and the cornice two modules and six parts. Such proportions as those presented in the two last-mentioned examples exhibit a decided superiority over those of the same order at the temple of Minerva Polias, or any other example existing in Greece.

The entablatures of the edifices erected at Rome are distinguished by a greater number of mouldings, which give to each order a real advantage. From the examples already adduced, it is easy to prove, that there exists a strongly-marked difference in the composition of the entablature of each order, whether it be in the edifices of Greece, constructed before the time of Augustus, or in

those erected at Rome in the reign of this and the following emperors. These progressive improvements made in the Ionic ordonnance have really brought this order to the highest perfection. There might be added to these comparisons, the Thermæ of Dioclesian, and other antique monuments, if the facts exhibited in the examples which have been cited be not esteemed sufficient proofs.

This manner, which the remains of the ancient edifices constructed at Rome present to us, has been followed, up to the present day, by all the most enlightened artists. The Ionic order has been fixed at nine diameters in height, one-fourth of which is given for the height of its entablature; and if there are varied shades found in the division of the parts of which the three principal members are composed, they nevertheless appertain to the proportions which the Ionic ordonnance, in the antiquities of Italy, offers us.

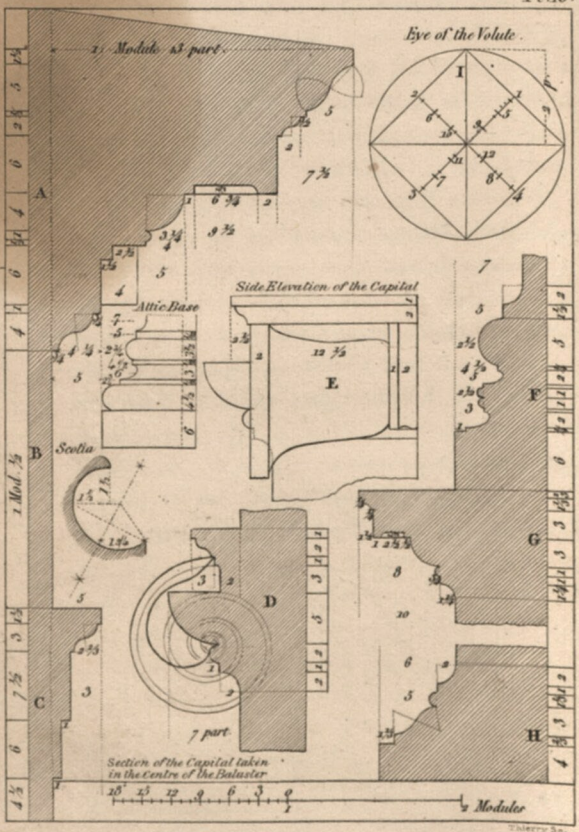
This order, being more susceptible of ornament than the Doric, has its columns sometimes enriched with flutings, the manner and proportions of which differ much from those observed in the Doric. The flutings of the Doric consist of a segment of a circle, without division between them; those of the Ionic order are described by a semi-circle, having between each a fillet, which separates the one from the other.

From what has been said, the reader, I think,

must be convinced that the order named Ionic is but a second combination of the first order. The column that was already employed in the Doric order acquired in the Ionic new proportions and relations, which gave to it a particular character. It is perhaps useless to repeat that Hermogenes, who was the first amongst the Greeks that had given precepts upon architecture, all of which he drew from the edifices constructed anterior to his time, and the faults of which he rectified in his new compositions, was the real author of this new system of ordonnance named Ionic, and of which he has given such useful lessons in the constructing of his temple to Bacchus. From what has been adduced in the course of this article, it must appear evident that there is in reality but one primitive order, which is the Doric; nevertheless, this does not exclude the denomination of a particular order which has been accorded to the Ionic, because its proportions and divisions are really distinct from those of the first.

DETAILS OF THE IONIC ORDER.

Pl. 10.



IONIC ORDER OF VIGNOLA,

WITH THE NAMES AND DETAILED PROPORTIONS OF THE MEMBERS AND MOULDINGS OF WHICH THE ORDER IS COMPOSED.

PLATES 9, 10, 12, & 21.

ENTABLATURE.	Heights. Modules.	Heights. Parts or Minutes.	Heights. Fractions	Projections from axis of Columns. Modules	Projections from axis of Columns. Parts or Minutes.	Projections from axis of Columns. Fractions
A. CORNICE.						
Fillet	..	1		2	10	..
Cyma Recta	..	5	..	....	....	..
Fillet	..	....	..	2	5	..
Cyma Talon	..	2	..	2	4	..
Corona	..	6	..	2	2	..
*Fillet	..	1	..	1	11	..
Quarter Round	..	4	..	1	10	..
Astragal	..	1	..	1	7	..
Fillet	..	....	..	1	6	..
†String of the Dentils	..	1	..	1	3	..
Dentils	..	6	..	1	6	..
Rest of Band behind Dentils	..	1	..	1	2	..
Cyma Talon	..	4	..	1	1	..
Entablature 4 mod. 9 parts.	1	13	-			
B. FRIEZE.						
Frieze	1	9	-	....	15	..
	1	9	-			
C. ARCHITRAVE.						
Fillet	..	1	..	1	2	..
Cyma Talon	..	3	..	1	1	..
First Fascia	..	7	..	....	17	..
Second Fascia	..	6	..	....	16	..
Third Fascia	..	4	..	....	15	..
	1	4	-			
D. Section of the Capital and Baluster of the Volute	1	1	..	1	8	..
E. Side elevation of the Capital and Baluster of the Volute	1	1	..	....	17	½

COLUMN AND PEDESTAL.	Heights. Modules.	Heights. Parts or Minutes.	Heights. Fractions	Projections from axis of Columns. Modules	Projections from axis of Columns. Parts or Minutes.	Projections from axis of Columns. Fractions
D. E. CAPITAL.						
Fillet	..	1	..	1	2	..
Cyma Talon	..	2	..	1	1	..
Fillet	..	1	..	....	17	..
Canal of the Volute	..	3	..	....	17	..
Quarter Round	..	5	..	1	4	..
	-	12	-			
SHAFT.						
Astragal	..	2	..	1	....	..
Fillet	..	1	..	....	17	..
Conge	..	2	..	....	15	..
Shaft between Conges	15	15	..	....	15	..
Conge	..	2	..	1	....	..
Fillet	..	1	..	1	2	..
Column 18 modules.	16	6	-			
F. BASE.						
Torus	..	5	..	1	4	..
Fillet	..	....	..	1	2	..
Scotia	..	2	..	1	2	..
Fillet	..	....	..	1	4	..
Two Astragals	..	2	..	1	4	..
Fillet	..	....	..	1	4	..
Scotia	..	2	..	1	3	..
Fillet	..	....	..	1	6	..
Plinth	..	6	..	1	7	..
	1	-	-			
G. CORNICE.						
Fillet	..	....	..	1	17	..
Cyma Talon	..	1	..	1	16	..
Corona	..	3	..	1	15	..
*Fillet	..	....	..	1	12	..
Quarter Round	..	3	..	1	11	..
Astragal	..	1	..	1	9	..
Fillet	..	1	..	1	8	..
	-	10	-			
DIE.						
Conge	..	1	..	1	7	..
Die	4	12	..	1	7	..
Conge	..	2	..	1	7	..
Pedestal 6 modules.	4	16	-			
H. BASE.						
Fillet	..	1	..	1	9	..
Astragal	..	1	..	1	10	..
Cyma Reversa	..	3	..	1	9	..
Fillet	..	....	..	1	13	..
Plinth	..	4	..	1	15	..
	-	10	-			
Total	28	9	-			

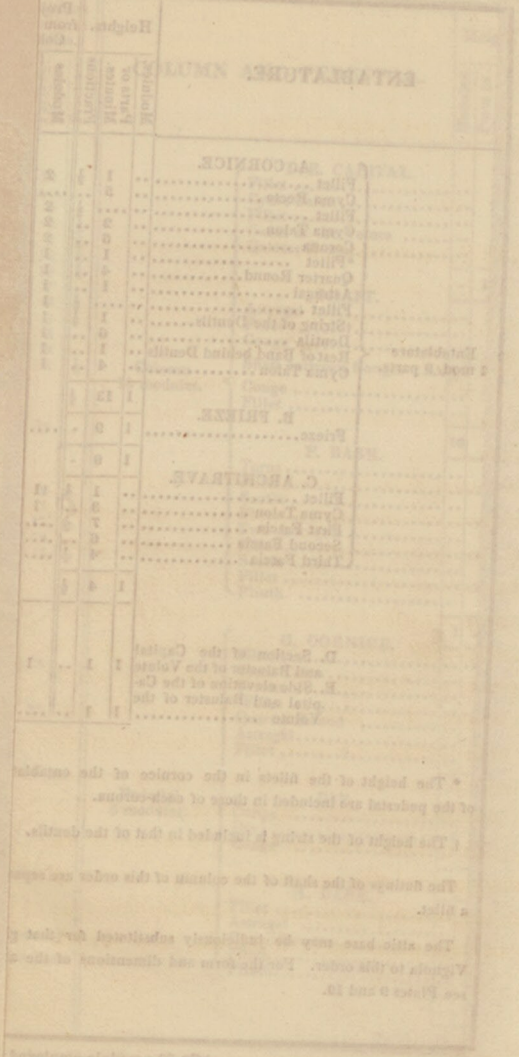
* The height of the fillets in the cornice of the entablature and of the pedestal are included in those of each corona.

† The height of the string is included in that of the dentils.

The flutings of the shaft of the column of this order are separated by a fillet.

The attic base may be judiciously substituted for that given by Vignola to this order. For the form and dimensions of the attic base see Plates 9 and 10.

☞ The module employed in this table is divided into eighteen parts.



OF PILASTERS.

PILASTERS, according to their employment at the present day, present nothing more than square pillars, supposed to be engaged in a wall, and which may be employed in this state, in the ordonnance of edifices, with as much reason and propriety as columns, when placed against, or engaged in a massive.

Pilasters may also be considered as a fictitious representation of columns, substituting them with propriety in many cases. Some persons have wished to exclude the employment of pilasters in architecture, on the ground that the Grecian monuments which exist do not exhibit this species of ordonnance. On this subject one observation may be made. Few original productions of this part of architecture, as practised in Greece, have descended to us, from which any thing either general or absolute can be concluded on this subject. The works which have been cited as peremptory precedents against the employment of pilasters are mostly temples of considerable uniformity in their plans and elevations, from which

nothing can be determined, except that the general custom of their ordonnances only admitted of insulated columns.

The antique architecture at Rome presents many examples of the employment of pilasters. There also exists great diversity in the numerous monuments in which they have been employed. Examples may be cited in which pilasters were used as a decorative ordonnance, without any connection with columns, whilst in others they have been placed in correspondence with insulated columns; besides a multitude of cases where the columns of a portico, or a part in advance, have been suitably repeated by corresponding pilasters. When the soffit of an architrave finishes against the face of a wall, who would not approve of it resting upon the capital of a pilaster of the same order, instead of remaining without any apparent support?

With regard to the projection of pilasters, Perrault observes, "that those which present but one face from the wall should have half of it in projection, or at least a sixth part, when there is no necessity for a greater thickness, as at the frontispiece of Nero."

The pilasters at the exterior of the Pantheon have but the tenth part of their surface in projection, whilst in other examples the fourteenth part only is given, as was practised in the pilasters at the forum of Nerva.

But when it is intended to profile imposts against their sides, they have one-fourth of their diameter given for projection. This proportion is convenient, because it prevents an irregular diminution of the Corinthian capital; for it then causes the inferior leaf and stem of the capital to be cut exactly in their centre. For the same reason, when semi-pilasters are employed in internal angles, it is essential to their symmetry that they should project more than half their diameter.

The diminution of pilasters is essentially connected with their form. There is on this point a diversity of opinions. "Pilasters," says Perrault, "do not ordinarily diminish, except when they present but one face from the wall. Those at the exterior of the portico of the Pantheon are without diminution. But when pilasters are on the same line with columns, and it is intended to continue the entablature upon each, without break, as at the two sides of the exterior of the Pantheon, it is then necessary to give the same diminution to pilasters as to columns, but to the front face only, leaving the sides without diminution, as is observed at the temple of Antoninus and Faustina. When pilasters, situated at an angle, present two faces from the wall, if one of the faces be opposite a column, this face should be diminished in the same proportion as the column, whereas that which is not opposite is left undiminished, as at the

portico of Septimus Severus. There are, nevertheless, examples in the antique, where pilasters have no diminution, as in the interior of the Pantheon, and others where they have very little, or less than that of the column, as at the temple of Mars the Avenger, and the arch of Constantine. On these occasions it was sometimes the practice of the ancients to place the architrave over the face of the columns, which caused the face of the pilasters to retire inwards. The temple of Mars the Avenger, interior of the Pantheon, and portico of Septimus Severus, present us with examples of this description. At other times they divided it into half, by making the architrave project in false bearing beyond the face of the column one half, and retire the other half from the face of the pilaster, as at the forum of Nerva."

When pilasters are employed in ordonnances of columns, they are submitted, as has been shown, to the same forms and proportions. As to flutings, there exists a greater liberty in their application to pilasters, the ancients having left us more than one diversity in this respect. Sometimes pilasters with flutings are found associated with columns without, as at the portico of the Pantheon, which doubtless may be explained by the difference of the materials. The pilaster being of white marble, and the columns of granite, which latter material will not admit of being worked in

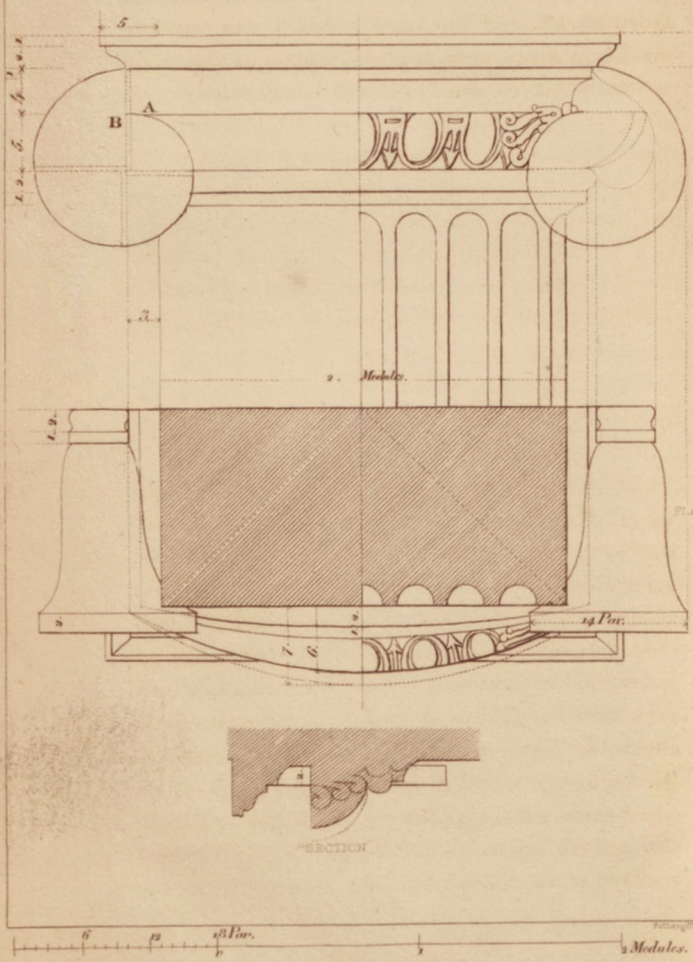
flutings, its principal worth and merit consisting in its fineness and polish. There are also at other times fluted columns accompanied with pilasters without flutings, examples of which may be seen at the temple of Mars the Avenger, and the portico of Septimus Severus. It may be added, that when pilasters have less projection than half of their diameter, flutings are not practised in the part which is termed *in return*.

If we consult the authority of the antique as to the number of flutings in pilasters, we find nothing determined in that respect. For example, there are seven in the pilasters of the portico of the Pantheon, the arch of Septimus Severus, and that of Constantine. The pilasters in the interior of the Pantheon have nine flutings, although, according to the ordinary practice, columns have but twenty-four. Flutings in pilasters are always employed in an uneven number. If they be semi-pilasters, forming an internal angle, four are placed instead of three and a half, and five instead of four and a half, when the entire pilasters of the same ordonnance have seven or nine. It is thus arranged to avoid the bad effect that would otherwise result in adapting the capital to the angle, the centre of which should coincide with it, without which an inequality would take place that would prevent the full extension of the capital in its upper members, particularly a capital ornamented with foliage,

which, without this arrangement, could not be sufficiently developed.

The proportion of capitals are the same in pilasters as in columns, as regards the heights; but the breadths are different, and the developement of their forms gives a greater space to each of their faces, because they are quadrangular. In the design (plate 11) of the Ionic pilaster, the volutes are placed in projection from its face, in like manner as in the column of the same order. In its height the same proportions and mouldings are observed; the only difference being in the fillet, astragal, and quarter-round. If the projection which this last moulding has beyond the face of the shaft be strictly followed it would be seven parts, but in this design it is fixed at six, that the curve which it is necessary to give it may be softer, and cut less upon the right lines against which it finishes. But it may have seven parts given to it, by observing that the extremities be brought to the same point, namely, to the superior point of the quarter round, A, at the intersection of the perpendicular to the axis of revolution at the height of B. The flutings have the same breadth as those of the lower part of the shaft of the column, and the angle of the pilaster may be terminated as shown in the design; or otherwise by increasing the breadth of the flutings, so that the part which is next to the angle be equal

CAPITAL OF IONIC PILASTER.



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to the others. It may be further observed, that the canal, marked two parts in depth over the horizontal line of the quarter round, (see section) ought to decrease in depth according as the spiral of the volute approaches towards the eye.

METHOD OF TRACING THE IONIC VOLUTE.

Plate 12.

AFTER having drawn the mouldings of the capital, the eye of the volute should be placed upon the horizontal line E, at the intersection of the vertical line D; afterwards from this centre should be drawn a circle, a part of the radius of the vertical diameter of which is named cathètes, and forms the diagonal of a square, the sides of which are divided into two equal parts. From these points should be drawn the sub-divisions of the axis, 1, 3, and 2, 4, which are to be divided into six equal parts: each of these points will be one of the centres which serve to describe the exterior contour of the volute.

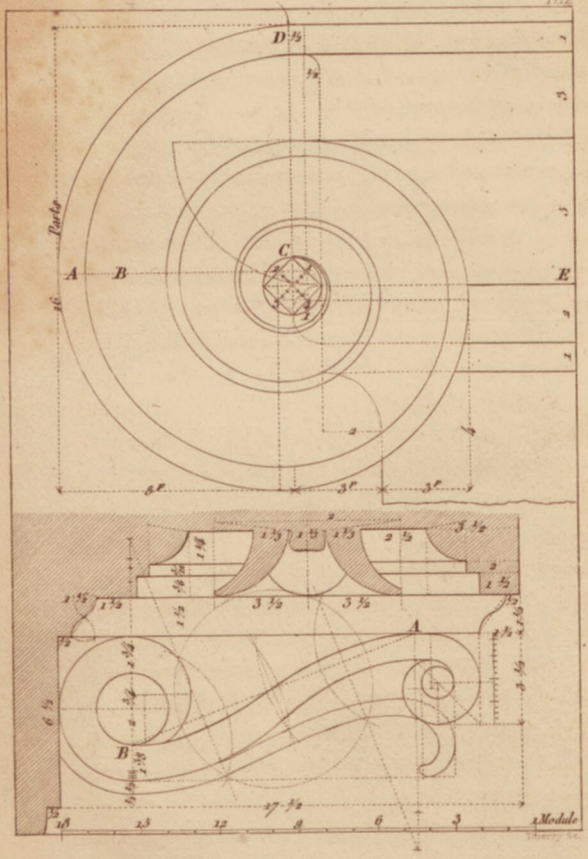
Placing one point of the compasses on the point 1, and extending the other to D, describe the quarter of the circle D A. Afterwards take the point 2 as a centre, and thus in the same order, according to the indication of the figure I, plate 10.

To find the centres for the interior contour of the volute, the divisions which served for the first should be divided into four parts. The first subdivision under each of the former points will serve as centre for the interior of the spiral fillet.

The total height of the volute is sixteen parts of a module, nine of which are over the horizontal line E, and seven below it. Plate 12.

METHOD OF TRACING THE IONIC VOLUTE & CORINTHIAN MODILLION.

Pl. 12.



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THE CORINTHIAN ORDER.

IT has already been remarked, that all the orders take their origin from the Doric,—that the Ionic itself is but a richer and more varied composition of this first order; and it will not be difficult to prove the same assertion with regard to the Corinthian order, which is the subject of this article.

The circumstance of the basket covered with a flag, which was placed upon the tomb of a young maiden, and the fortunate chance which occasioned the composition of the capital known by the name of Corinthian, has been treated as a fable by many writers. But in the Corinthian capital two things must be distinguished which are greatly different, and very independent of each other; namely, its form and decoration. As to its form, it is certain that the Corinthian existed a long time before Callimachus, its supposed inventor; and it is the opinion of some, that both the idea of its form and decoration has been imitated from the capitals of the Egyptians, which were surrounded with leaves and sacred plants. On the supposition, however, of the truth of the

circumstance above alluded to, it is not improbable that Callimachus, on seeing the effect of the plant on the sides of the basket, derived from thence the idea of substituting the acanthus for the other plants or leaves which had been employed previous to his time; and the accidental arrangement of this acanthus might also have suggested that order and disposition of the leaves which custom has since established as a law for this capital. Nevertheless, the great variety observed in the decoration of the Corinthian capital amongst the ancients sufficiently proves, that its form or type was always independent of the accessory ornaments that religion, allegory, and the taste of the sculptors, caused to be applied in so many different manners.

Amongst the edifices that time has spared at Athens, the two most remarkable are the tower of the Winds, and the small monument vulgarly called the Lantern of Demosthenes. The capitals of the tower of the Winds are very different, in the arrangement which their foliage offers, to that agreed upon to distinguish the Corinthian capital. The general form of the capital is well expressed, and is ornamented with one range of olive and another of water-plant leaves. Neither volutes, cauliculi or caulicoles, nor flores or roses, are to be found. The capital of the Lantern of Demosthenes has volutes, it is true, but nothing resembling the ordinary composition of the Corinthian capital.

The first, or lower range, are water-plant leaves; there is no astragal; and nothing of the acanthus appears in its decoration.

These two examples are sufficient to prove how much the decoration of the capital was at this time arbitrary, although its form was always the same.

If the primitive state of the order be examined, does not it appear that the only invention for which Callimachus is entitled to credit is, that of having substituted acanthus leaves for those of the olive or others? He certainly did not invent the form of the vase, nor the manner of decorating it with foliage, since in the remains of different edifices there are examples preserved where this form exists without foliage, and others where this foliage is not of the acanthus. It would be contrary to the ordinary march of invention to suppose that the most complex forms of decoration should precede the simplest, or that the perfecting of this capital has been in diminishing the richness of its decoration. What is related of Callimachus, in the discovery of this capital, proves that its form, and the custom of ornamenting it with foliage, already existed at the time that he by chance saw this basket covered with a tile, under the borders of which bended the leaves of the acanthus. It is indeed improbable, that in a country where no capital of this kind had ever

existed, the feeble indication just spoken of could have given rise to the conception and composition of the Corinthian capital. The human mind does not proceed thus in the invention of the arts. On the contrary, it may be presumed that Callimachus was already acquainted with, and habituated to, the form of the vase as capital; and as it was the usage to surround it with ornaments of foliage, on meeting accidentally with the basket surrounded by acanthus leaves, he might indeed be struck with the analogy between it and a capital ornamented with other leaves. From the history of the edifices sufficient may be deduced to convince us in what the discovery of Callimachus consisted.

The different accounts of this architect do not agree as to the time during which he flourished, but there can be little doubt that it was before the ninety-fifth Olympiad; for at this epoch Pausanias places the construction of a temple by Scopas, in which, over a first range of columns, a second was placed, of the Corinthian order. It is not, however, in Greece, but at Rome, that we must seek for the most beautiful models of the Corinthian order.

"The Corinthian capital," says Perrault, "differs in every respect from those of the two other orders, for it has neither abacus nor ove, which are the essential parts common to the Doric and Ionic. It has indeed an abacus, but it is totally

different from the others, its four faces forming segments of a circle, having a rose in the centre of each, and each face inclining inwards from its upper to its lower edge. In the place of oves and fillets it has but the edge of a vase, the body of which occupies the part of the collarin, and is of a considerable height, being decorated with a double range of eight leaves, the upper extremities of which are bent outwardly. Between these leaves issue stalks, from whence spring the volutes, which have no resemblance, either in form or number, to those of the Ionic capital, being in the Ionic four, and in the Corinthian sixteen.

One diameter and a sixth is given for the height of the capital. This height is divided into seven parts, four of which are given for the height of the leaves, namely, two parts to the first range, and the same to the second. The height of each leaf is divided into three, the highest of which is given for the descent of its curve. The three parts which remain of the seven are for the stalks, volutes, and abacus. These parts are again sub-divided into seven others; the uppermost two of which are given to the abacus, the three next to the volute, and the two last to the stalks or cauliculi, one of which is given for the descent of the curve of its leaves. Under the angles of the abacus, where the volutes join, there is a small acanthus leaf, between the volutes and

the abacus, which inclines towards the angles of the latter, so as to fill the vacancy that there would otherwise be between the volute which descends, and the underside of the abacus, which remains horizontal.

The proportions of this capital, as found in the remains of antiquity, differ from many of those presented in the works of different architects. In the former, the height of the capital is sometimes lower by a seventh part, being but the diameter of the column, as is seen at the temple of the Sibilla, at Tivoli, which accords with that given by Vitruvius. Sometimes it is higher, as in the temple of Vesta, at Rome, and at the frontispiece of Nero, where it is nearly two-sixths more than the diameter of the column, whilst at other times they are found of the height which is here given, as at the portico of Septimus, and at the temple of Jupiter Tonans. At others it is somewhat less, as at the Pantheon, the three columns of Campo Vaccino, at the temples of Faustina and of Mars the Avenger, at the portico of Septimus, and at the arch of Constantine. There are other examples where it is higher, as at the Thermæ of Dioclesian. The moderns also differ in their opinions on this point; for some have made it the height which is here given, as Vignola, Palladio, Scamozzi, Viola, and De Lorm; whilst others, such as Bullant, Alberti, Cataneo, Barbaro, and

Serlio, have made them low, after the manner of Vitruvius.

The abacus, in Vitruvius, as also in the three columns of Campo Vaccino, and at the temple of Faustina, is the seventh part of the height of the capital. It is sometimes less, having but an eighth part, as at the Pantheon, at the Basilica of Antoninus, and at the Market of Nerva. In others, it has from a fifth to a sixth, as at the temple of Vesta, at Rome, and that of the Sibilla, at Tivoli.

The leaves of this capital have suffered no less variation. Vitruvius divides or outlines them after the manner of the acanthus; those of the temple of the Sibilla, at Tivoli, are of this kind. The greater part of the antique edifices present the olive leaf divided into five. In some they are divided into four, as at the temple of Mars the Avenger; others into three, as is seen at the temple of Vesta, at Rome. These leaves, amongst the antique examples, are sometimes unequal in their heights, the lower range being the highest; in others the second range are the highest, and others present them perfectly equal. The part which occupies the centre of the leaves is very often cut or worked, as is observed at the Pantheon and other places. At other times it is left plain, as at the temples of Vesta, of the Sibilla, &c. The first range of leaves have ordinarily a

slight projection near the inferior extremity. This form is very remarkable at the temple of Vesta.

The base which is often applied to the Corinthian column, and which is considered by some authors as most suited to this order, is that named the attic. This base is composed of an upper and lower torus, having between them a scotia, which is separated from each torus by a fillet. The base commonly assigned to this order differs from the attic in having a second scotia, two additional fillets, and two astragals.

The entablature is commonly divided into ten parts, three of which are given to the architrave, three to the frieze, and the remaining four to the cornice. These proportions are variable, and the antique edifices present much diversity in this respect. The frieze is higher than the architrave at the temple of Jupiter Tonans, as also at that of the Sibilla, whilst, on the contrary, it is less at the portico of the Pantheon, the temple of Peace, and at the Basilica of Antoninus; but the frieze is equal to the architrave in the interior of the Pantheon.

The architrave is divided into three fascias; nevertheless there are examples where there are only two.

The frieze of the Corinthian order has this peculiarity, that whilst it is susceptible of the

greatest richness, it may also with great propriety be executed plain. Such in general is the property of this order, that it admits of the greatest magnificence of ornament, yet can with equal propriety permit its omission. The shaft of its column is often ornamented with flutings, although it is not uncommon to find it without; its base either receives ornaments, or offers its profiles plain. Its cornice and frieze are ordinarily the parts where the luxury of decoration has the best effect; nevertheless there are many examples of the greatest simplicity in their embellishment, without either incoherence or disparity resulting from that simplicity of decoration.

The character of richness attached to the Corinthian order belongs to its proportions, its forms, and to their numerous and varied disposition, as much as to sculpture, which is employed only in embellishing its details. As this order embraces considerable power in the extent of its details, by which expression is given in architecture, it may be observed that it is susceptible of a very great variety of modified expression, according to the taste which presides in its composition, and the employment of its means.

There exists a greater power of characterizing the intermediate shades of expression, from the simplest Doric to the richest Corinthian, than is generally imagined. The Doric, when it is neces-

sary, is susceptible of considerable richness and elegance, of which we have many examples in Italy and in Greece; whilst considerable gravity of expression may be given to the Corinthian, as at the portico of the Pantheon; or a noble and imposing character, by the projection of its profiles, as in the fragment of the frontispiece of Nero.

METHOD OF TRACING THE CORINTHIAN MODILLION.

Plates 12 & 14.

OUTLINE the part upon which the modillion rests, as also the rose which ornaments the soffit, or under side of the corona. Take six parts for the height of the modillion, and sixteen for its projection. Form a small scale, three parts and a half in height, as in plate 12, and divide it into sixteen parts. The figure in plate 12 shows the dimensions to be given to the small squares, the angles of which serve as centres from which to describe the curved parts of the modillion. Draw the line A B, and divide it into four equal parts

A COMPARATIVE TABLE OF THE GENERAL PROPORTIONS OF THE CORINTHIAN ORDER,

FROM THE MOST CELEBRATED EDIFICES OF ANTIQUITY,

TOGETHER WITH THOSE ASSIGNED TO IT BY THE MOST EMINENT MODERN MASTERS.

	Choragic Monument of Lysicrates.		*An antique Edifice at Salonica.*		*Arch of Theseus, at Athens.*		*Portico surrounding the Temple of Jupiter Olympus at Athens.*		*Temple of Jupiter Stator, at Rome.*		*Temple of Mars the Avenger, at Rome.*		*Temple of Jupiter Tonans, at Rome.*		*Interior of the Pantheon, at Rome.*		*Portico of the Pantheon, at Rome.*		*Frontispiece of Nero, at Rome.*		*Forum of Nerva, at Rome.*		*Temple of Antoninus and Faustina, at Rome.*		*Basilica of Antoninus, at Rome.*		*Arch of Constantine, at Rome.*		*PALLADIO.*		*SCAMOZZI.*		*SERLIO.*		*ALBERTI.*		*VIGNOLA.*	
	Height of the Members.	Projection from the axis of the Columns.	Height of the Members.	Projection from the axis of the Columns.	Height of the Members.	Projection from the axis of the Columns.	Height of the Members.	Projection from the axis of the Columns.	Height of the Members.	Projection from the axis of the Columns.	Height of the Members.	Projection from the axis of the Columns.	Height of the Members.	Projection from the axis of the Columns.	Height of the Members.	Projection from the axis of the Columns.	Height of the Members.	Projection from the axis of the Columns.	Height of the Members.	Projection from the axis of the Columns.	Height of the Members.	Projection from the axis of the Columns.	Height of the Members.	Projection from the axis of the Columns.	Height of the Members.	Projection from the axis of the Columns.	Height of the Members.	Projection from the axis of the Columns.	Height of the Members.	Projection from the axis of the Columns.	Height of the Members.	Projection from the axis of the Columns.	Height of the Members.	Projection from the axis of the Columns.	Height of the Members.	Projection from the axis of the Columns.
	Modules. Parts. Fractions.	Modules. Parts. Fractions.	Modules. Parts. Fractions.	Modules. Parts. Fractions.	Modules. Parts. Fractions.	Modules. Parts. Fractions.	Modules. Parts. Fractions.	Modules. Parts. Fractions.	Modules. Parts. Fractions.	Modules. Parts. Fractions.	Modules. Parts. Fractions.	Modules. Parts. Fractions.	Modules. Parts. Fractions.	Modules. Parts. Fractions.	Modules. Parts. Fractions.	Modules. Parts. Fractions.	Modules. Parts. Fractions.	Modules. Parts. Fractions.	Modules. Parts. Fractions.	Modules. Parts. Fractions.	Modules. Parts. Fractions.	Modules. Parts. Fractions.	Modules. Parts. Fractions.	Modules. Parts. Fractions.	Modules. Parts. Fractions.	Modules. Parts. Fractions.	Modules. Parts. Fractions.	Modules. Parts. Fractions.	Modules. Parts. Fractions.	Modules. Parts. Fractions.	Modules. Parts. Fractions.	Modules. Parts. Fractions.	Modules. Parts. Fractions.	Modules. Parts. Fractions.	Modules. Parts. Fractions.
Entablature — Cornice	1 20 ..	2 15 ..	1 13 ..	2 4 ..	1 16 ..	2 21 ..	1 18 ..	2 19 ..	2 9 ..	3 3 ..	.. .. ..	.. 26 ..	1 16 ..	2 13 ..	1 21 ..	2 16 ..	1 24 ..	2 23 ..	2 16 ..	1 17 ..	1 25 ..	2 23 ..	1 22 ..	2 17 ..	1 28 ..	2 23 ..	1 17 ..	2 14 ..	1 19 ..	2 15 ..	1 9 ..	2 11 ..	1 16 ..	2 10 ..	2 28 ..	2 28 ..
Entablature — Frieze	1 9 ..	.. .. ..	1 12 ..	1 2 ..	1 10 ..	1 9 ..	.. 27 ..	1 2 ..	1 13 ..	.. .. ..	.. .. ..	.. .. ..	1 8 ..	.. .. ..	1 12 ..	.. .. ..	1 9 ..	.. .. ..	1 15 ..	.. .. ..	1 14 ..	.. .. ..	1 10 ..	.. .. ..	1 10 ..	.. .. ..	1 8 ..	.. .. ..	1 2 ..	.. .. ..	1 7 ..	.. .. ..	1	.. .. ..	1 15 ..	.. .. ..
Entablature — Architrave	1 21 ..	1 3	1 16	1 3	1 12 ..	1 8	1 11	1 9	1 13	1 3	1 9	1 5	1	1 4	1 12 ..	1 3	1 12 ..	1 3	1 14	1 5	1 14 ..	1 5	1 13	1 3	1 13	1 3	1 8 ..	1 4	1 13	1 6	1	1	1	1	1	1 .. ..
	4 20	.. ..	4 12	.. ..	3 27	.. ..	.. ..	.. ..	5 6	.. ..	.. ..	.. ..	4 15	.. ..	4 26	.. ..	4 16	.. ..	4 26	.. ..	4 24	.. ..	4 16	.. ..	4 23	.. ..	3 24	.. ..	4 1	.. ..	3 16	.. ..	3 10	.. ..	5 ..	.. ..
Column — Capital	2 23 ..	1 17 ..	2 11 ..	1 23 ..	2 15 ..	1 22 ..	2 7 ..	1 25 ..	2 6 ..	1 14 ..	2 9 ..	1 16 ..	2 10 ..	1 14 ..	2 8 ..	1 15 ..	2 7 ..	1 15 ..	2 16 ..	1 17 ..	2 12 ..	1 15 ..	2 8 ..	1 14 ..	2 10 ..	1 15 ..	2 5 ..	1 14 ..	2 10 ..	1 15 ..	2 10 ..	1 11 ..	2 10 ..	1 15 ..	2 10 ..	1 15 ..
Column — Shaft	16 16 ..	1	14 28 ..	1	15 5 ..	1	16 7 ..	1	17	1	.. .. ..	.. .. ..	17 4 ..	1	15 26 ..	1	16 8 ..	1	16 10 ..	1	.. .. ..	.. .. ..	15 28 ..	1	15 24 ..	1	15	1	16 20 ..	1	15	1	16 20 ..	1	16 20 ..	1 .. ..
Column — Base	.. 21 ..	1 15 ..	1 6 ..	1 15 ..	1 10 ..	1 12 ..	1 1 ..	1 12 ..	1	1 12 ..	.. .. ..	.. .. ..	1	1 11 ..	1	1 11 ..	1	1 12 ..	1 3 ..	1	1	1 12 ..	.. 29 ..	1	1 6 ..	1	1 6 ..	1	1	1	1	1	1	1	1	1 .. ..
	20 ..	.. ..	18 15 ..	.. ..	19	.. ..	19 15 ..	.. ..	20 6 ..	.. ..	.. .. ..	.. .. ..	20	.. ..	19 4 ..	.. ..	19 16 ..	.. ..	20	.. ..	.. .. ..	.. ..	19 6 ..	.. ..	20 11 ..	.. ..	19 7 ..	.. ..	19	.. ..	18	.. ..	18	.. ..	20	.. ..
Height of the Column and Entablature	24 20 ..	.. .. ..	22 27 ..	.. .. ..	23 9 ..	.. .. ..	23 12 ..	.. .. ..	25 13 ..	.. .. ..	.. .. ..	.. .. ..	24 22 ..	.. .. ..	23 19 ..	.. .. ..	24 2 ..	.. .. ..	24 26 ..	.. .. ..	.. .. ..	.. .. ..	23 23 ..	.. .. ..	24	.. .. ..	24	.. .. ..	24 1 ..	.. .. ..	21 16 ..	.. .. ..	21 10 ..	.. .. ..	25	.. .. ..
Pedestal — Cornice	.. .. ..	.. .. ..	.. 16 ..	1 18 ..	.. 15 ..	1 25 ..	.. 12 ..	1 13 ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. 20 ..	1 1 ..	.. .. ..	.. 27 ..	.. .. ..	.. 23 ..	1 27 ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..
Pedestal — Die	.. .. ..	.. .. ..	1 3 ..	1 13 ..	3 3 ..	1 12 ..	1 2 ..	1 5 ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	5 2 ..	2 1 12	.. .. ..	4 8 ..	.. .. ..	1 16 ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..
Pedestal — Base	.. .. ..	.. .. ..	1 13 ..	1 18 ..	3 20 ..	1 19 ..	1 15 ..	1 14 ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	1 16 ..	2 1 ..	.. .. ..	4 8 ..	.. .. ..	1 19 ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..
	2 2	.. ..	4 8	.. ..	4 8	.. ..	*2 ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	7 18 ..	.. ..	10 11 ..	.. ..	6 20	.. ..	.. ..	.. ..	.. ..	.. ..	6 20	.. ..
	Height of Members.	From face of Arcades.	Height of Members.	From face of Arcades.	Height of Members.	From face of Arcades.	Height of Members.	From face of Arcades.	Height of Members.	From face of Arcades.	Height of Members.	From face of Arcades.	Height of Members.	From face of Arcades.	Height of Members.	From face of Arcades.	Height of Members.	From face of Arcades.	Height of Members.	Width.	Height of Members.	Width.	Height of Members.	Width.	Height of Members.	From face of Arcades.	Height of Members.	From face of Arcades.	Height of Members.	From face of Arcades.	Height of Members.	From face of Arcades.	Height of Members.	From face of Arcades.	Height of Members.	From face of Arcades.
Impost	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	1	.. 10 ..
Archivolt	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	1	.. 8 ..
Key of Arcades without Pedestals	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	2	.. .. ..
Key of Arcades with Pedestals	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	2	.. .. ..
	Height.	Width.	Height.	Width.	Height	Width.	Height.	Width.	Height.	Width.	Height.	Width.	Height.	Width.	Height.	Width.	Height.	Width.	Height.	Width.	Height.	Width.	Height.	Width.	Height.	Width.	Height.	Width.	Height.	Width.	Height.	Width.	Height.	Width.	Height.	Width.	Height.	Width.
Intercolumniations, from axis to axis	.. .. ..	6 6 ..	.. .. ..	8 24 ..	.. .. ..	.. .. ..	.. .. ..	8	.. .. ..	5 5 ..	.. .. ..	4 28 ½	.. .. ..	5 3 ½	.. .. ..	6 10 ..	.. .. ..	6 22 ½	.. .. ..	5	.. .. ..	12 27 ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	6 20 ..	.. .. ..
Columns of Arcades without Pedestals, from axis to axis	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	12	.. .. ..
Apertures of Arcades without Pedestals	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	15	.. .. ..
Columns of Arcades with Pedestals, from axis to axis	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	24 20 ..	12 .. ..
Apertures of Arcades with Pedestals	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..	.. .. ..

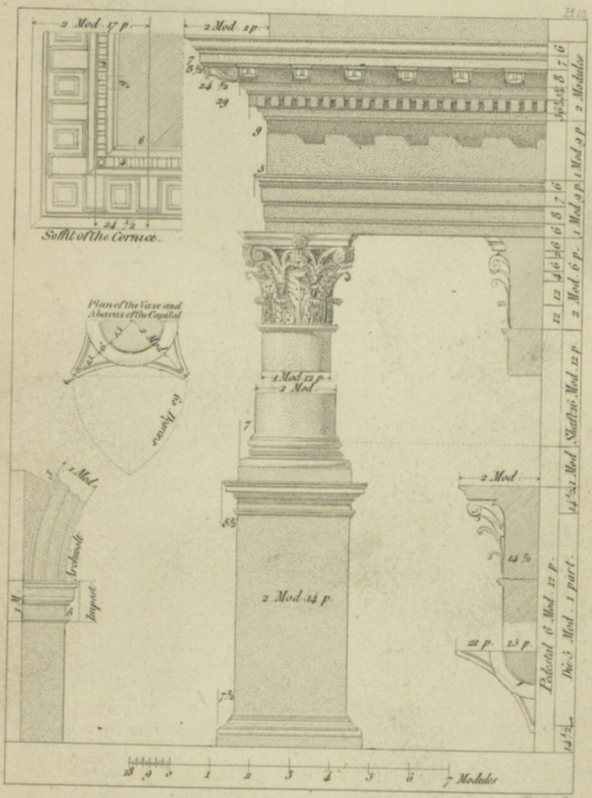
The projection of the capitals is taken to the centre of a line drawn from each extremity of the abacus.

* There is a socle under the base of the pedestal, 1 module and 6½ parts in height, and 1 module and 20½ parts in projection from the axis of the column.

† There is also a socle between the plinth of the base of the column and the cornice of the pedestal of the Arch of Constantine, which is 18½ parts in height, and 1 module and 12½ parts in projection; and another under the plinth of the base of the pedestal, 1 module and 9 parts in height, and 2 modules and 3½ parts in projection.

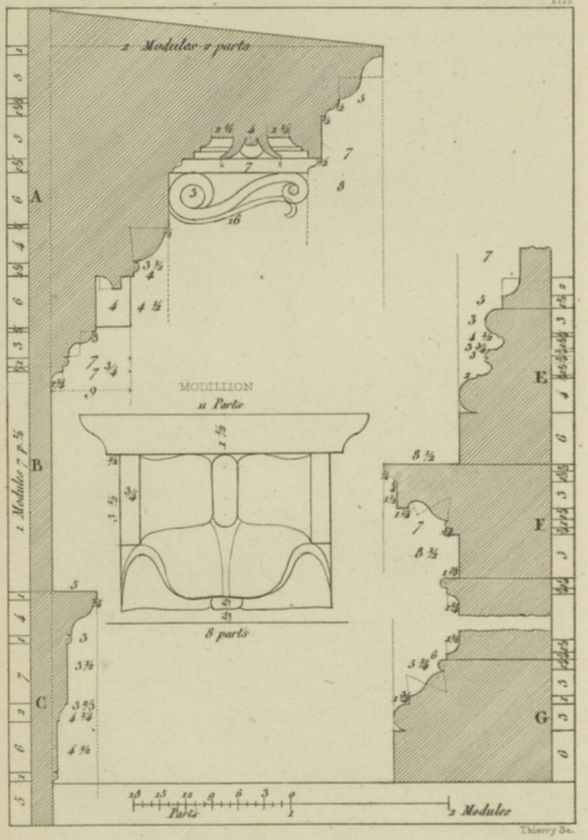
☞ The module employed in this table is divided into thirty parts.

CORINTHIAN ORDER.



London. Published. For Pittington's Architectural Theatre by John Richardson. 91 Royal Exchange. Feb. 11. 1829.

DETAILS OF THE CORINTHIAN ORDER.



by perpendicular lines, which, at the intersection of the verticals coming from A B, will give the points from whence to draw the segments of the circle which completes the form of the modillion.

The acanthus leaf which supports the modillion, and the profile of the rose which ornaments the soffit, may also be drawn with the compasses.

METHOD OF DRAWING THE CORINTHIAN CAPITAL.

Plate 15.

THE half of the plan is given as seen in face, and the other half upon the angle. After having drawn the axis of the plan to correspond with the axis of the elevation of the capital, describe a circle of a radius of two modules, and divide its circumference into sixteen equal parts; the points of division will correspond to the middle of each leaf, namely, eight for the centres of the lower range of leaves, the intermediate points forming the eight centres for the upper range. The vase of the capital is determined by a circle of a radius

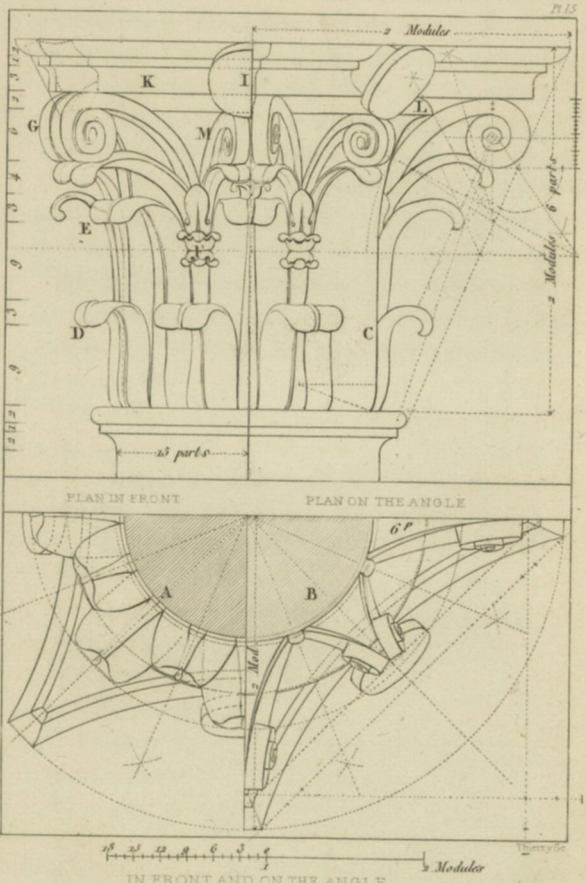
of fourteen parts and a half: the figure shows the circles which determine the leaves rising against the sides of the vase. The elevation shows the heights to which the projections of the plan are carried. Above the leaves are sixteen volutes, of which eight of the largest support the four angles of the abacus, and the eight smaller ones the inferior edge of the vase, as also the four flowers which ornament the middle of the abacus.

The volutes, seen in profile, may be drawn with the compasses; but they are always more agreeable to the eye when the hand afterwards follows the contours.

The different parts of the capital are marked as follows:—

A. Plan of the leaves and of the abacus.
B. Plan of the large and small volutes.
C. Vase or body of the capital.
D. First range of leaves.
E. Second range of leaves.
F. Cauliculi.
G. Large volute.
M. Small volute.
I. Flower.
K. Abacus.
L. Border of the vase.

ELEVATION OF THE CORINTHIAN CAPITAL



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CORINTHIAN PILASTER.

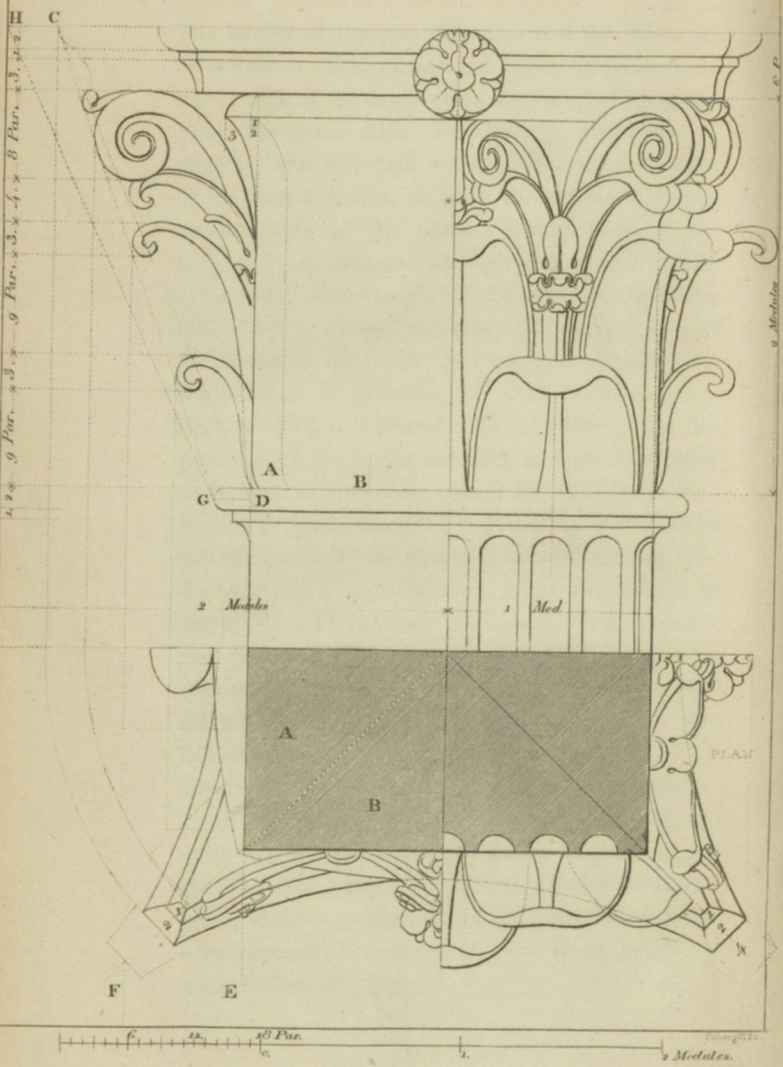
THE capital of the Corinthian pilaster, like that of the Corinthian column, is decorated with two ranges of leaves, each range being in numerical proportion to those of the column, having two to each face, which gives eight for the whole. There are, however, at the Thermæ of Dioclesian, and the frontispiece of Nero, examples of twelve leaves instead of eight.

The ordinary disposition of leaves in the Corinthian pilaster is such that two are placed in the lower range, one in the upper in the centre, and two halves at the sides, which are half of the large leaves placed at the angle. It may be further remarked, that the top of the vase has not its surface straight as at the lower part, but curved. It is thus at the Basilica of Antoninus, having the eighth part of the inferior diameter of the column; but at the portico of Septimus Severus they have only one-tenth, and at the portico of the Pantheon one-twelfth.

The present design (plate 16) of the Corinthian pilaster is a production after the example of those of the Pantheon, at Rome, submitted to the proportions given by Vignola to this order. The abacus has the same diagonal projection, and a line from this point to the extremity of the astragal determines that of the leaves and volutes at the angles.

The border of the vase diminishes on the sides, so as to relieve the large volutes. The projection of the volutes at the angle gives also that of the leaf under the same line. The flutings are seven in number, one of which corresponds to the middle of the small leaves, so that the remaining space at the angle of the pilaster would become too large, if not ornamented with an astragal which extends the whole height of the shaft of the pilaster. If it is found necessary to the regularity of the soffit to diminish the superior diameter of the pilaster A, according to that of the column behind which it is intended to be placed, the disposition of the leaves will then change their place to B, and become narrower. All the projections in the proportions given by the line drawn from the extremity of the diagonal of the abacus C to the astragal D equally retire; but the height of the whole still remains the same. It may sometimes happen, in decorating a façade with pilasters, that according to this first design, the abacus may not have sufficient projection; in such cases it may receive the same apparent projection as that of the abacus of columns, from the face of the architrave E, to the extremity of the diagonal F, giving the same projections to all the leaves and volutes on the line G H, so as to give it greater developement, since on these occasions there is no necessary restraint on account of its being employed independent of columns.

CAPITAL OF CORINTHIAN PILASTER.



COMPOSITE ORDER,

WITH THE NAMES AND DETAILED PROPORTIONS OF THE MEMBERS AND MOULDINGS OF WHICH THE ORDER IS COMPOSED.

PLATES 17, 18, 19, 20, and 21.

ENTABLATURE.	Heights. Modules.	Heights. Parts or Minutes.	Heights. Fractions	Projections from axis of Columns. Modules	Projections from axis of Columns. Parts or Minutes.	Projections from axis of Columns. Fractions
A. CORNICE.						
Fillet	..	1	..	2	15	..
Cyma Recta	..	5	..	2	15	..
Fillet	..	1	..	2	10	..
Cyma Talon	..	2	..	2	9	..
Astragal	..	1	..	2	7	..
Corona	..	5	..	2	7	..
Cyma Recta under Corona	..	1	..	2	5	..
Fillet	..	1	..	1	15	..
Cyma Talon	..	4	..	1	14	..
Fillet	..	....	..	1	11	..
*String of Dentils	..	2	..	1	8	..
Dentils	..	7	..	1	11	..
Rest of Band behind Dentils	..	1	..	1	5	..
Quarter Round	..	5	..	1	4	..
Entablature 5 modules.	2	-	-			
B. FRIEZE.						
Astragal	..	1	..	....	17	..
Fillet	..	....	..	....	16	..
Conge	..	1	..	....	15	..
Frieze	..	17	..	....	15	..
Conge	..	7	..	1	4	..
	1	9	-			
C. ARCHITRAVE.						
Fillet	..	1	..	1	4	..
Cavetto	..	2	..	1	2	..
Quarter Round	..	3	..	1	2	..
Astragal	..	1	..	....	17	..
First Fascia	..	10	..	....	17	..
Cyma Talon	..	2	..	....	16	..
Second Fascia	..	8	..	....	15	..
	1	9	-			

* The height of the string of dentils is taken in that of the dentils.

COLUMN AND PEDESTAL.	Heights. Modules.	Heights. Parts or Minutes.	Heights. Fractions	Projections from axis of Columns. Modules	Projections from axis of Columns. Parts or Minutes.	Projections from axis of Columns. Fractions
CAPITAL.						
Capital (*For Details see Plates* 17, 19, & 20.)	2	6	..	1	9	..
	2	6	-			
SHAFT.						
Astragal	..	2	..	1	....	..
Fillet	..	1	..	....	17	..
Conge	..	2	..	....	15	..
Shaft between Conges	16	3	..	..	15	..
				1	....	..
Conge	..	2	..	1	2	..
Fillet	..	1	..	1	2	..
Column 20 modules.	16	12	-			
E. BASE.						
Torus	..	3	..	1	4	..
Fillet	..	....	..	1	2	..
Scotia	..	1	..	1	2	..
Fillet	..	....	..	1	3	..
Astragal	..	....	..	1	3	..
Fillet	..	....	..	1	3	..
Scotia	..	2	..	1	2	..
Fillet	..	....	..	1	5	..
Torus	..	4	..	1	7	..
Plinth	..	6	..	1	7	..
	1	-	-			
F. CORNICE.						
Fillet	..	....	..	1	15	..
Cyma Talon	..	1	..	1	14	..
Corona	..	3	..	1	13	..
Cyma Recta	..	1	..	1	10	..
Fillet	..	....	..	1	8	..
Cavetto	..	1	..	1	7	..
Frieze	..	5	..	1	7	..
Astragal	..	1	..	1	9	..
	-	14	-			
DIE.						
Pedestal 6 mod. 12 parts. Fillet	..	1	..	1	8	..
Conge	..	1	..	1	7	..
Die	4	16	..	1	7	..
Conge	..	2	..	1	9	..
Fillet	..	1	..	1	9	..
	5	4	-			
G. BASE.						
Astragal	..	1	..	1	9	..
Cyma Reversa	..	3	..	1	12	..
Fillet	..	1	..	1	13	..
Torus	..	3	..	1	15	..
Plinth	..	4	..	1	15	..
	-	12	-			
Total..	31	12				

☞ The module employed in this table is divided into eighteen parts.

THE COMPOSITE ORDER.

THE pretended order to which the moderns have given the name of the Composite is probably the last that will ever be brought before the architectural world, as having any pretensions to those characteristics which constitute a distinct order. It is intended in the present article to prove, that no Composite, as forming a distinct order, exists, and to show the source of the errors and mistakes which have given to this pretended order an imaginary existence.

It is not amongst the Romans, with whom this new order is pretended to have had its origin, that we must seek for examples and authorities to justify the supposition; for it may be shown, in the most satisfactory manner, by a deep and accurate investigation of the varied symbolical compositions employed by the Romans in the decoration of capitals, to mark more strongly the character of particular monuments, that they who are represented as its inventors did not so much as suspect its existence amongst them.

The order named Composite owes the distinction which has been given to it entirely to the moderns.

It may, however, be necessary to explain the nature of the errors to which this circumstance may be attributed. More than one cause has operated in giving rise to the unnecessary distinction of this supposed order, and among the most prominent may be enumerated an erroneous system of reasoning, resulting from a want of adequate knowledge of the true principles on which invention in architecture is founded, together with a hasty assumption of the existence of this order from equivocal examples; an ignorance of the character of numerous antique edifices, in which the greatest variety of decoration may be found in the same order; and a consequent erroneous judgment.

It has been stated, that one of the principal errors on which the contested existence of the order in question is founded is an error of reasoning. It may be added, that presumption has contributed as much as ignorance to bring it forward, and to give it authority. Since the restoration of the arts every possible effort has been made by the moderns to produce what they term conquests of invention in architecture. The works of many who have written on the nature and principles of this art are filled on the one hand with regrets that there is no longer any scope for invention, and on the other with the vain boastings of an extravagant presumption on the facility of making

A COMPARATIVE TABLE OF THE GENERAL PROPORTIONS OF THE COMPOSITE ORDER,

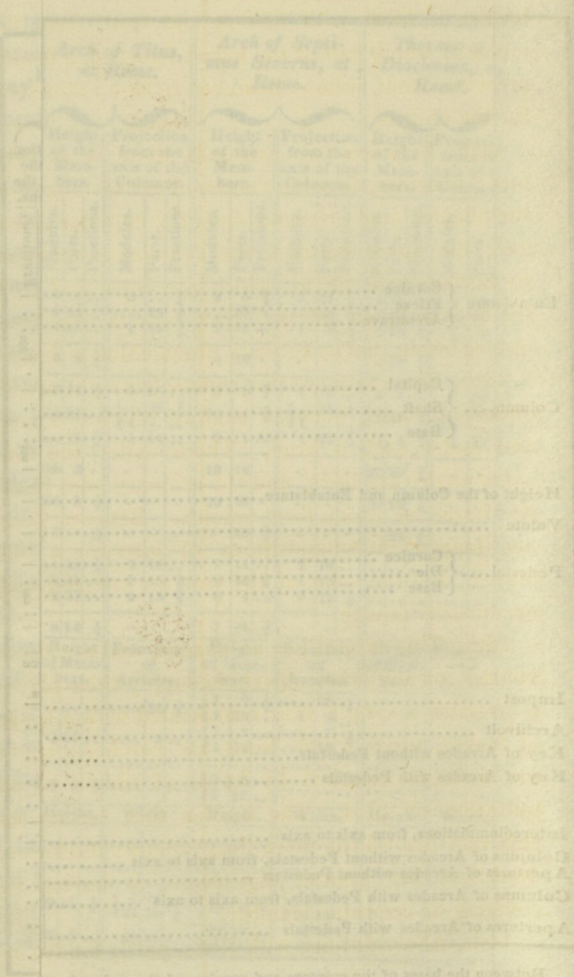
FROM THE MOST CELEBRATED EDIFICES OF ANTIQUITY,

TOGETHER WITH THOSE ASSIGNED TO IT BY THE MOST EMINENT MODERN MASTERS.

	Arch of Titus, at Rome.				*Arch of Septimus Severus, at Rome.*				*Thermæ of Dioclesian, at Rome.*				*PALLADIO.*				*SCAMOZZI.*				*VIGNOLA.*			
	Height of the Members.			Projection from the axis of the Columns.	Height of the Members.			Projection from the axis of the Columns.	Height of the Members.			Projection from the axis of the Columns.	Height of the Members.			Projection from the axis of the Columns.	Height of the Members.			Projection from the axis of the Columns.	Height of the Members.			Projection from the axis of the Columns.
	Modules.	Parts.	Fractions.	Modules. Parts. Fractions.	Modules.	Parts.	Fractions.	Modules. Parts. Fractions.	Modules.	Parts.	Fractions.	Modules. Parts. Fractions.	Modules.	Parts.	Fractions.	Modules. Parts. Fractions.	Modules.	Parts.	Fractions.	Modules. Parts. Fractions.	Modules.	Parts.	Fractions.	Modules. Parts. Fractions.
Entablature — Cornice	2	2	..	3 ..	2	8	..	2 21	1	21	..	2 18 ..	1	20	..	2 18 ..	1	16	..	2 13 ..	2	..	..	2 25 ..
Entablature — Frieze	1	14	..	 28	....	25	..	 26	1	14	..	 27	1	..	..	1 5 ..	1	1	..	.... 26 ..	1	15	..	.... 25 ..
Entablature — Architrave	1	16	..	1 10	1	15	..	1 6	1	14	..	1 3	1	10	..	1 5 ..	1	9	..	1 3 ..	1	15	..	1 6 ..
	5	2	..	- - -	4	19	-	- - -	4	19	..	- - -	4	-	-	- - -	3	27	-	- - -	5	-	-	- - -
Column — Capital	2	14	..	1 19 ..	2	8	..	1 16 ..	2	11	..	1 16 ..	2	10	..	1 15 ..	2	10	..	1 15 ..	2	10	..	1 16 ..
Column — Shaft	16	22	..	.. 26 ..	16	..	..	.. 26 ..	16	17	..	.. 26 ..	16	18	..	.. 26 ..	16	5	..	.. 26 ..	16	20	..	.. 25 ..
Column — Base	..	29	..	1 14 ..	1	1	..	1 12 ..	1	1	..	1 13 ..	1	1	..	1 12 ..	1	..	..	1 11 ..	1	..	..	1 11 ..
	20	6	-	- - -	19	10	-	- - -	19	29	..	- - -	20	-	-	- - -	19	15	-	- - -	20	-	-	- - -
Height of the Column and Entablature	25	8	..	- - -	23	29	-	- - -	24	19	..	- - -	24	-	-	- - -	23	12	-	- - -	25	-	-	- - -
Volute	1	-	..	- - -	-	26	..	- - -	-	22	..	- - -	-	25	..	- - -	-	25	..	- - -	-	26	..	- - -
Pedestal — Cornice	..	28	..	2 12 ..	1	..	..	2 10 ..	....	..	..	....	..	25	..	1 27 ..	..	22	..	1 28 ..	..	23	..	1 25 ..
Pedestal — Die	4	21	..	1 15 ..	4	20	..	1 15 ..	....	..	..	....	4	4	..	1 12 ..	3	24	..	1 11 ..	5	6	..	1 11 ..
Pedestal — Base	2	25	..	2 13 ..	2	1	..	2 12 ..	....	..	..	....	1	20	..	1 27 ..	1	15	..	1 25 ..	..	20	..	1 25 ..
	8	14	..	- - -	7	21	..	- - -	-	-	-	- - -	6	20	-	- - -	6	1	..	- - -	6	20	-	- - -
	Height of Members.			From face of Arcades.	Height of Members.			From face of Arcades.	Height of Members.			From face of Arcades.	Height of Members.			From face of Arcades.	Height of Members.			From face of Arcades.	Height of Members.			From face of Arcades.
Impost	1	..	..	.... 22 ..	1	2	..	.... 20 ..	..	..	..	....	1	9	..	.... 15 ..	1	1	..	.... 13 ..	1	..	..	.... 10 ..
Archivolt	1	11	..	.... 8 ..	1	10	..	1 2 ..	..	..	..	....	..	..	..	....	..	..	..	....	..	..	..	....
Key of Arcades without Pedestals	..	..	..	....	1	2	..	.... 7 ..	..	..	..	....	1	..	..	.... 6 ..	..	28	..	.... 6 ..	1	..	..	.... 8 ..
Key of Arcades with Pedestals	..	..	..	....	1	12	..	.... 10 ..	..	..	..	....	..	..	..	....	1	25	..	....	..	..	..	....
	3	9	..	....	2	5	..	....	..	..	..	....	2	..	..	....	2	..	..	....	1	20	..	....
	Height.			Width.	Height.			Width.	Height.			Width.	Height.			Width.	Height.			Width.	Height.			Width.
Intercolumniations, from axis to axis	..	..	..	....	..	..	..	....	..	..	..	....	..	..	..	....	..	..	..	....	..	..	..	....
Columns of Arcades without Pedestals, from axis to axis	..	..	..	....	..	..	..	....	..	..	..	....	..	..	..	....	..	..	..	....	5	10	..	.. .. 6 20 ..
Apertures of Arcades without Pedestals	..	..	..	....	..	..	..	....	..	..	..	....	..	..	..	....	20	15	..	12 24 ..	6	12	..	.. .. 12 ..
Columns of Arcades with Pedestals, from axis to axis	29	15	..	8 24 ..	29	2	..	12 21 ..	..	..	..	.. .. ..	..	..	..	.. .. ..	18	20	..	8 28 ..	18	..	..	9 .. ..
				21 18 ..				21 10 ..																
Apertures of Arcades with Pedestals	26	5	..	16 24 ..	16	13	..	6 23 ..	..	..	..	.. .. ..	24	20	..	9 21 ..	25	16	..	14 28 ..	..	..	..	16 .. ..
					26	15	..	15 11 ..									23	16	..	10 23 ..	25	..	..	12 .. ..

Between the bases of the columns and cornices of the pedestals of the Arches of Titus and Septimus Severus is a second plinth, or socle, which in the former is 25 parts in height, and 1 module and 15⅝ parts in projection from the axis of the column; and in the latter 20 parts in height, and 1 module and 14⅜ parts in projection. The arch of Septimus Severus has also a socle under the bases of its pedestals 1 module and 11 parts in height, and 2 modules and 12½ parts in projection, which dimensions are not included in the separate proportions of the column and pedestal, but in the height given of the columns of arcades with pedestals. There is likewise a socle under the bases of the columns without pedestals of the arcades of Scamozzi, 1 module in height, and 1 module and 14 parts in projection, taken from the axis of the column, which dimension will be found included in its proper place.

☞ The module employed in this table is divided into thirty parts.



basket is filled with flowers and fruit, from the midst of which half of the naked figure of a female presents itself, whose head serves as an ornament for the abacus.

11th. Between two astragals there is an even face; consoles, forming volutes, bear the angles of the abacus, and descend upon the superior astragal; the space between the consoles is occupied by flutings with fillets, which are separated from the abacus by an astragal sculptured in round and oblong beads, and an echinus, ornamented with oves.

12th. The abacus of this capital has eight angles equally distant; between each of which is a rose, and under each a head. Those under the four extra angles are lions, and the ordinary ones rams, the horns of which form volutes. Between these are suspended compositions of interwoven oak leaves, and the sides of the vase are covered with ornamental foliage.

13th. This capital has no abacus, and is without volutes, or any other objects to supply their place; it presents a simple vase ornamented with a range of leaves, upon which birds are perched; above are festoons attached by knots of ribbon to an imitation of pins. The border that terminates this vase has a little more than ordinary thickness, doubtless for greater expression, it having no covering or crowning member.

14th. Above flutings with fillets, partly hidden by

foliage, roses present themselves in the midst of various wreaths that form a cincture, which is surmounted by a cyma recta, ornamented with water-plant leaves, and a quarter round with oves. These mouldings are separated by fillets; above the oves, and a little in projection from them, is the Doric abacus, accompanied with its cyma talon and fillet, all three of which are cut at the angle, as also is the abacus. Under the remaining part a large leaf extends itself, curving with more grace even than a volute.

15th. Between two astragals, the lesser of which is sculptured in round and oblong beads, is a range of simple leaves. The lesser astragal has two fillets; from its superior fillet, to another which is under a small astragal or bead ornamented with encircling leaves, is a considerable even space, in the centre of which are roses. Above the bead is a cyma recta, which is very high; it is separated from the abacus by a fillet, and the abacus is crowned by a cyma talon, which is decorated with sculpture, as is also the cyma recta.

16th. The Doric capital, with all its ornaments, crowns two ranges of foliage. There are many capitals of this kind, which only differ from each other by some variety in the leaves or mouldings: the two preceding capitals form examples.

17th. Above the astragal there is a plain band, which is surmounted with an Ionic capital, the

volutes of which are oval, and enclose a rose. The abacus is enriched with scrolled foliage, and the baluster is divided into several parts, each of which is differently ornamented.

18th. This is of the same kind as the preceding capital; a range of leaves is placed between an astragal, and a smaller one or bead sculptured in round beads, and accompanied with fillets; a line of heads occupies the place of oves, having above them only a part which resembles a fillet. From this fillet, surmounted with a cyma talon, of which the abacus is ordinarily composed, the volute commences by taking the form of foliage, and in rising changes itself into a cornucopia, from whence, amongst flowers and fruit, springs the rest of the volute, in the centre of which is a rose.

The collection of antique fragments by Piranesi, furnishes many other examples of the fertility of the ancients in the composition of capitals, and the decoration of the Corinthian order. It would be useless in the present instance to prolong their enumeration, as those who wish to be convinced by their own researches may refer to the above-mentioned collection. The only just inference that can be deduced from these facts and authorities is, that the pretended Composed or Composite capital is but one of the thousand and more capitals invented amongst the Romans, and which has no more claim to a distinct place amongst the orders

than those which have just been described. Every thing proves, on the contrary, if there must be a choice made from the whole of these productions of the capricious luxury of the Romans, that more than one capital would merit a preference to the pretended Composite, which has a real and essential fault in its composition, from the decoration of its capital too much resembling that of the Corinthian, which, so far from surpassing, it does not even equal it in richness.

Whatever credit custom and example may have given to it, judicious and enlightened authors may be found who have at all periods protested against the usurpation of this spurious order. "It is, in my opinion," says Chambrai, (more than a century since,) "unreasonable to give to it the name of an order, it being more unworthy of such distinction than the Tuscan. It has been the cause of all the confusion which has been introduced in architecture since artists have taken the liberty of dispensing with those orders that the antiques have prescribed, to gothicize at their caprice a great number of capitals, which all pass under this name. The good Vitruvius foresaw, even at his time, the bad effects that those of the profession might cause from the passion for novelty, having already carried them to a licentious slighting of the rules of the art, which ought to be inviolable; so that it is an inveterate evil which

gains ground each day, and is almost without remedy. Nevertheless, if the moderns would place some bounds to their license, confine themselves to the limits of the Composite, and the rules to which it is subjected, there would be little for criticism to offer upon this subject, as examples may be seen amongst the vestiges of the century of Titus Vespasianus, (to whom the senate, after the taking of Jerusalem, caused a magnificent triumphal arch to be erected) which are of this order. This order, however, ought to be employed only when suitable, and always alone. It is thus its inventors have used it, who, conscious of its want of merit, avoided placing it in comparison with the other orders. Modern architects, not having had this consideration, have often fallen into the inexcusable error of placing the stronger over the weaker. Scamozzi, in his Treatise of the Five Orders, is the first who has spoken on this subject, and he has given to the Corinthian the highest place. To avoid all kind of contest, I consider it better never to employ them together, at the example of the antiques; although both Philibert Delorme and Sebastiano Serlio imagined they had seen it at the Colosseum, and gave a drawing, to serve for an example to their Composite order: but they have made a very false observation, these being two Corinthians one above the other."

To this may be added another very judicious

reflection of the same author on the Composite order. "There is no more reason why an architect should employ his ingenuity and study to introduce new orders to give merit to his productions, and to render him a man of talent, than that an orator, to acquire the reputation of being eloquent, should invent words which have never been previously employed; or a poet to compose verses in a new and singular cadence and measure; this affectation being puerile and impertinent: and if at times some such liberty be required, it is necessary it be employed àpropos, so that every one may instantly discover the reason. It is thus it has been used amongst the antiques, but with so great a reserve, that they have limited their license to the form alone of the capital, of which they have made a hundred graceful, and on certain occasions, singular compositions, where they have well succeeded, and beyond which they cannot be employed."

The whole of the theory of the pretended Composite order is contained in this last paragraph of Chambrai, who admits of variety in the decoration of capitals, according to the nature of the occasion; but who does not believe that decorating a capital in a different manner constitutes a new order. There are three things very distinct in the Doric, Ionic, and Corinthian orders; their form, ornament, and proportion. These three distin-

guish themselves from the other two, the supposed Tuscan and Composite, in all these points: therefore it must be a great mistake to pretend to invent a new order by changing one of these things only; for if the form be changed without changing the ornaments, or the ornaments without the form, or both without changing the proportion, the production would be nothing new; for these three things are necessarily connected in each distinct order, and depend on a common principle which has united them, not arbitrarily, but according to the general principles of harmony. In architecture, as in other kindred arts, the ancients acknowledged only three points of comparison, the *greatest*, the *least*, and the *medium* between the two; for all the edifices of which we have any knowledge, or that it is possible to invent, always express in their appearance *more* or *less* solidity, gravity, simplicity or lightness, grace or variety. As between the *greatest* and the *least* there can be but one *mean* term that unites in a certain degree these opposite qualities, the ancients have done nothing more than fix these three terms; in the Doric, by the characters which convey the most just idea of solid supports, grave ornaments, and strong or short proportions; in the Corinthian, by the most delicate forms, rich decoration, and light and elegant proportion; in the medium, or Ionic order, by the medium employment

of forms, ornaments, and proportions equally distant from the simplicity of the one and the richness of the other.

METHOD OF DRAWING THE COMPOSITE CAPITAL.

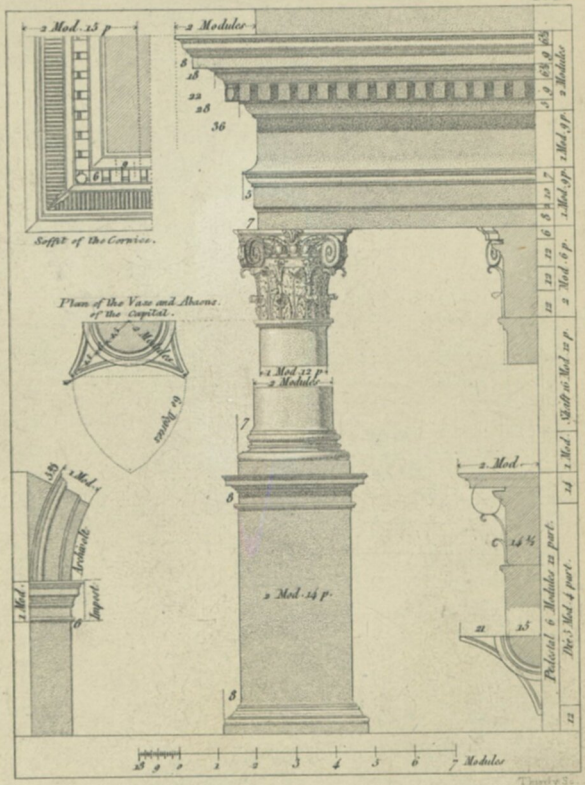
Plates 19 & 20.

THE Composite capital consists in a union of a part of the Ionic and Corinthian capitals: it has only eight volutes, which repose upon the second range of leaves, and in ascending, enter into part of the abacus. Its total mass is the same as that of the Corinthian. The two ranges of leaves are the same, and by consequence the body of the vase is of the same proportion.

The abacus, which crowns the capital, has also the same form in its plan.

The volute of this capital, vertically developed, and seen in face, is drawn in the same manner as the Ionic volute; but as regards its position in a design, it can only be well described by the hand, guided by the eye.

COMPOSITE ORDER.



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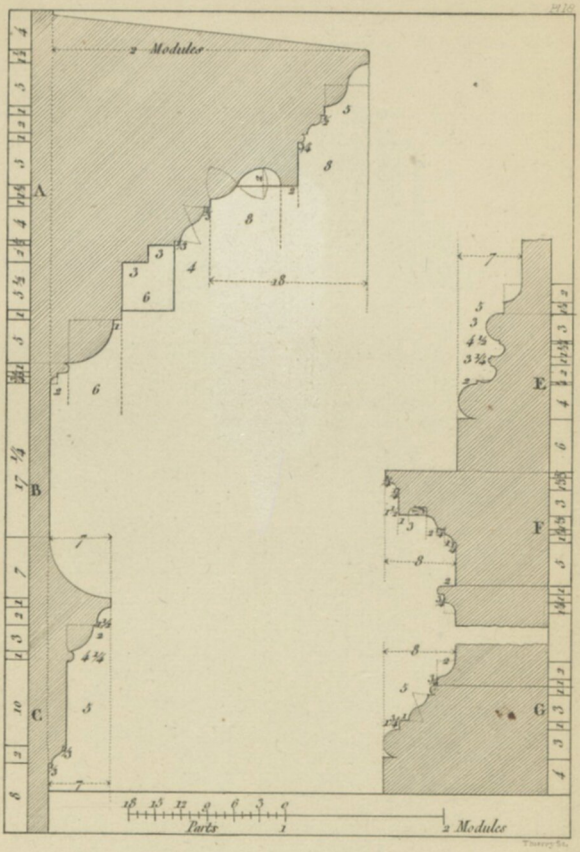
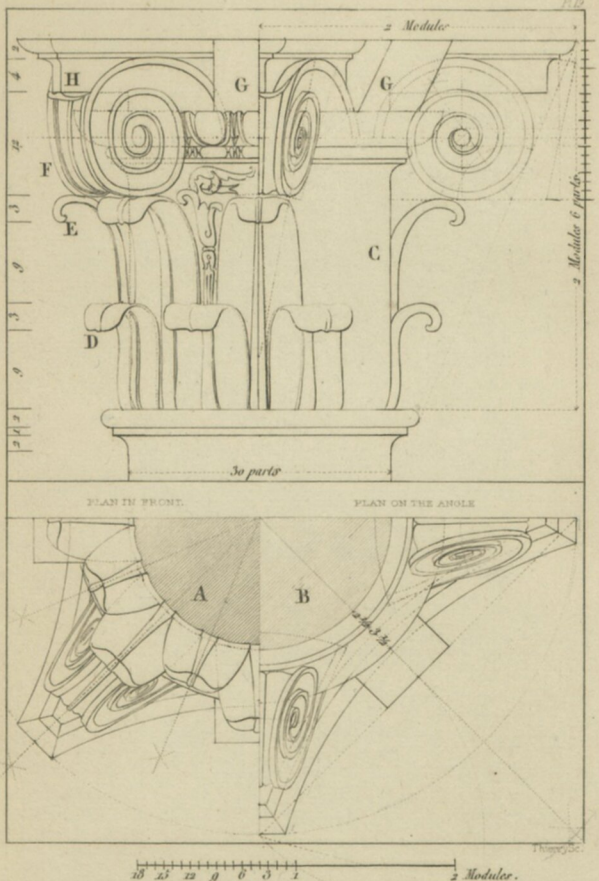
DETAILS OF THE COMPOSITE ORDER.



ELEVATION OF THE COMPOSITE CAPITAL.



IN FRONT AND ON THE ANGLE.

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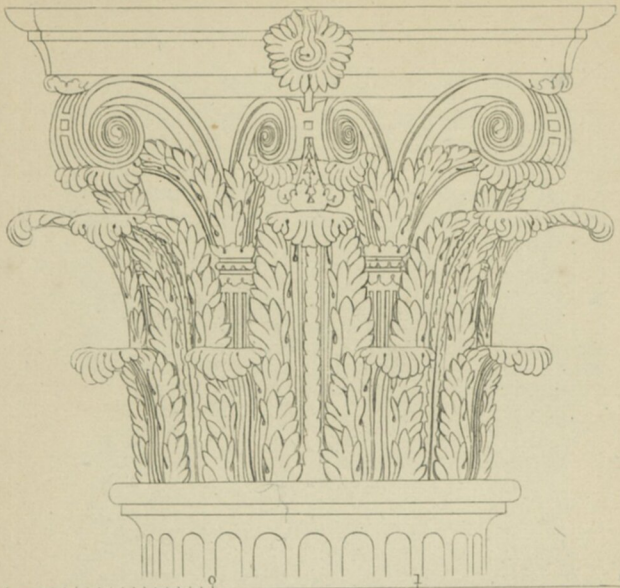
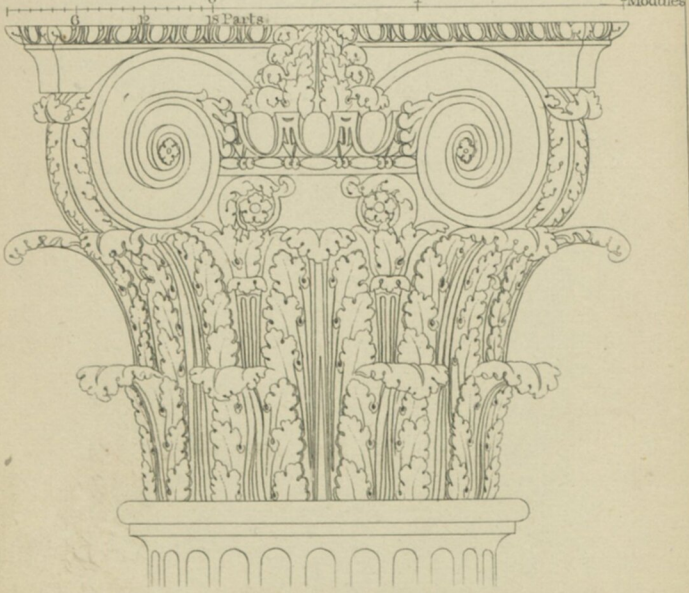
CORINTHIAN CAPITAL.



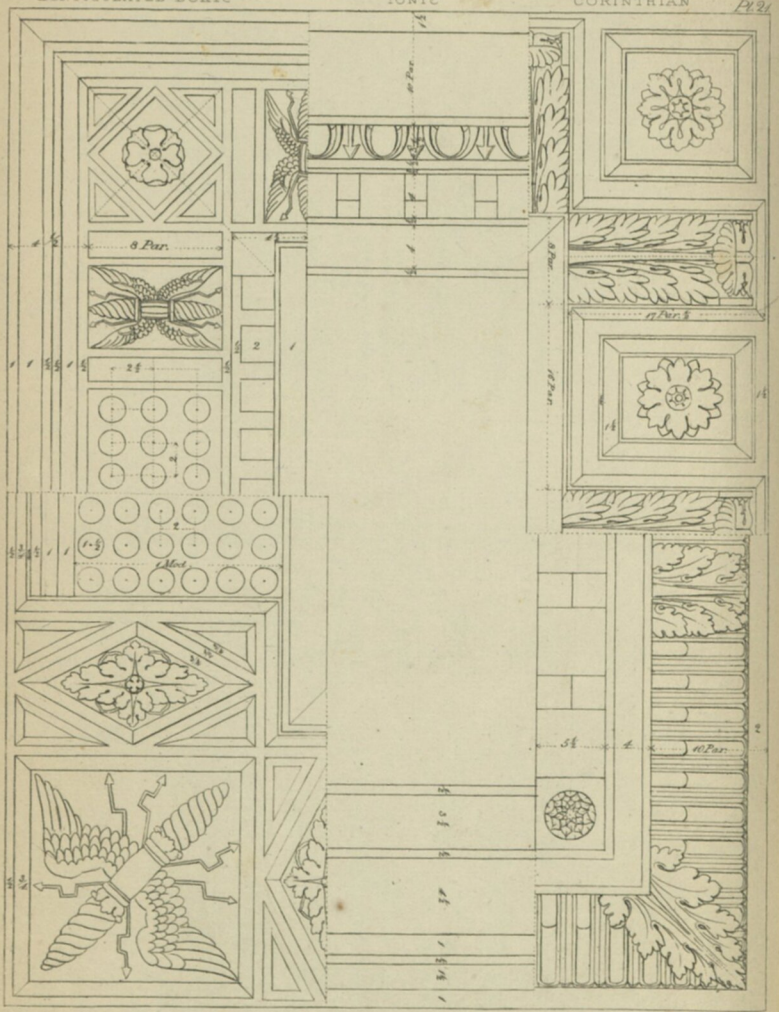


COMPOSITE CAPITAL.

Fothergill Sc.

SOFFITS OF THE FIVE ORDERS.

DENTICULATED DORIC IONIC CORINTHIAN Pl. 21



MUTULE DORIC. TUSCAN. COMPOSITE.

Fitzwilliam Sc.

Scale of Tuscan & Doric.

0 6 12 Module

0 6 12 Module

Scale of Ionic Corinthian & Composite.

CORINTHIAN ORDER OF VIGNOLA,

WITH THE NAMES AND DETAILED PROPORTIONS OF THE MEMBERS AND MOULDINGS OF WHICH THE ORDER IS COMPOSED.

PLATES 12, 13, 14, 15, 20, & 21.

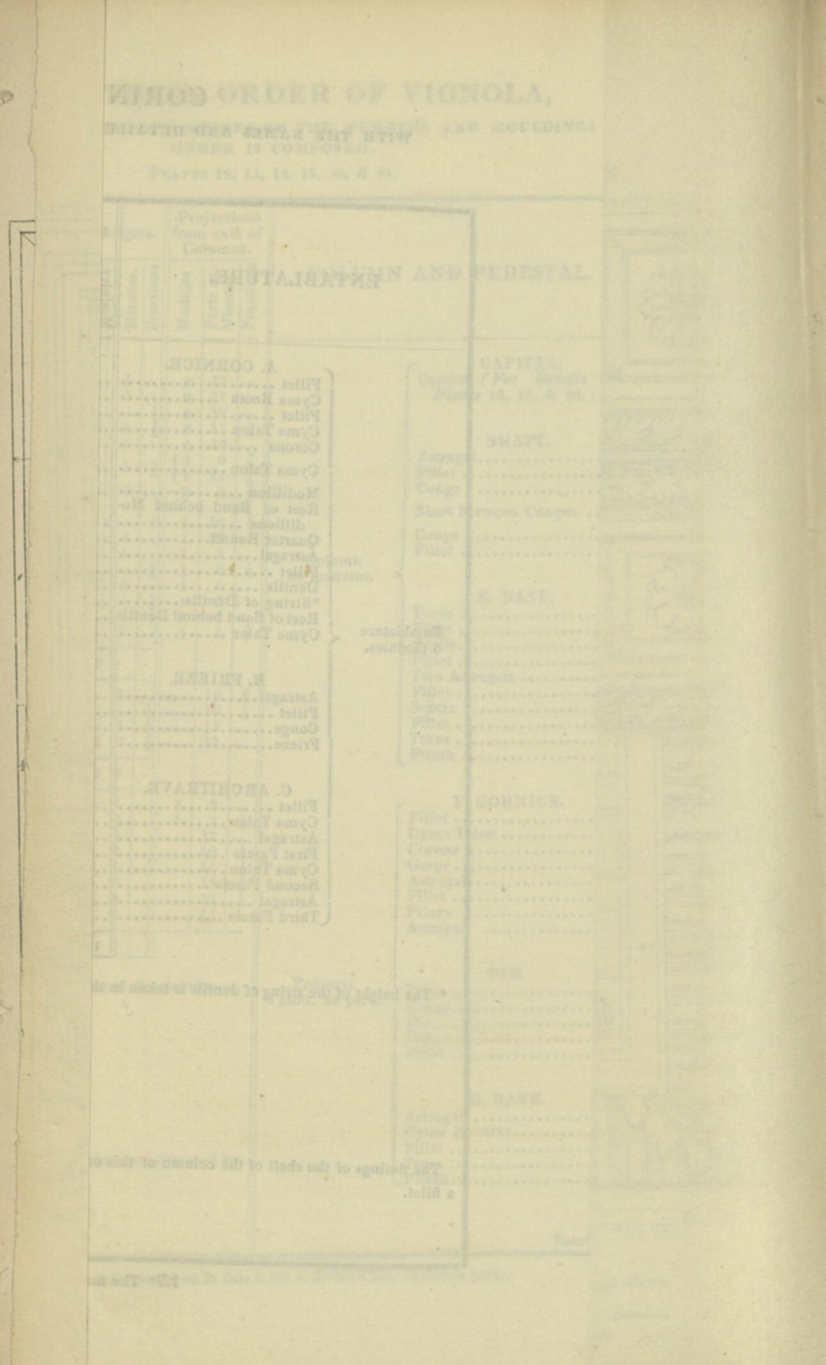
ENTABLATURE.	Heights. Modules.	Heights. Parts or Minutes.	Heights. Fractions	Projections from axis of Columns. Modules	Projections from axis of Columns. Parts or Minutes.	Projections from axis of Columns. Fractions
A. CORNICE.						
Fillet	..	1	..	2	17	..
Cyma Recta	..	5	..	2	17	..
Fillet	..	....	..	2	12	..
Cyma Talon	..	1	..	2	11	..
Corona	..	5	..	2	10	..
Cyma Talon	..	1	..	2 / 1	9 / 11	..
Modillion	..	6	..	2	8	..
Rest of Band behind Modillions	..	....	..	1	10	..
Quarter Round	..	4	..	1	10	..
Astragal	..	1	..	1	7	..
Fillet	..	....	..	1	6	..
Dentils	..	6	..	1	6	..
*String of Dentils	..	1	..	1	5	..
Rest of Band behind Dentils	..	....	..	1	2	..
Cyma Talon	..	3	..	1	1	..
Entablature 5 modules.	2	-	-			
B. FRIEZE.						
Astragal	..	1	..	....	16	..
Fillet	..	....	..	....	16	..
Conge	..	1	..	....	15	..
Frieze	1	6	..	....	15	..
	1	9	-			
C. ARCHITRAVE.						
Fillet	..	1	..	1	2	..
Cyma Talon	..	4	..	1	1	..
Astragal	..	1	..	....	17	..
First Fascia	..	7	..	....	16	..
Cyma Talon	..	2	..	....	16	..
Second Fascia	..	6	..	....	15	..
Astragal	..	1	..	....	15	..
Third Fascia	..	5	..	....	15	..
	1	9	-			

* The height of the string of dentils is taken in that of the dentils.

The flutings of the shaft of the column of this order are separated by a fillet.

COLUMN AND PEDESTAL.	Heights. Modules.	Heights. Parts or Minutes.	Heights. Fractions	Projections from axis of Columns. Modules	Projections from axis of Columns. Parts or Minutes.	Projections from axis of Columns. Fractions
CAPITAL.						
Capital *(For Details see Plates 13, 15, & 20.)*	2	6	..	1	9	..
	2	6	-			
SHAFT.						
Astragal	..	2	..	1	....	..
Fillet	..	1	..	....	17	..
Conge	..	2	..	....	15	..
Shaft between Conges	16	3	.. / 1	.. /	15 /	..
Conge	..	2	..	1	....	..
Fillet	..	1	..	1	2	..
Column 20 modules.	16	12	-			
E. BASE.						
Torus	..	3	..	1	4	..
Fillet	..	....	..	1	2	..
Scotia	..	1	..	1	2	..
Fillet	..	....	..	1	3	..
Two Astragals	..	1	..	1	4	..
Fillet	..	....	..	1	3	..
Scotia	..	1	..	1	3	..
Fillet	..	....	..	1	5	..
Torus	..	4	..	1	7	..
Plinth	..	6	..	1	7	..
	1	-	-			
F. CORNICE.						
Fillet	..	....	..	1	15	..
Cyma Talon	..	1	..	1	15	..
Corona	..	3	..	1	14	..
Gorge	..	1	..	1	12	..
Astragal	..	1	..	1	8	..
Fillet	..	....	..	1	7	..
Frieze	..	5	..	1	7	..
Astragal	..	1	..	1	8	..
	-	14	..			
DIE.						
Pedestal 6 mod. 12 parts. Fillet	..	....	..	1	8	..
Conge	..	1	..	1	7	..
Die	4	15	..	1	7	..
Conge	..	1	..	1	7	..
Fillet	..	....	..	1	8	..
	5	1	..			
G. BASE.						
Astragal	..	1	..	1	9	..
Cyma Reversa	..	3	..	1	8	..
Fillet	..	1	..	1	12	..
Torus	..	3	..	1	14	..
Plinth	..	6	..	1	14	..
	-	14	..			
Total..	31	12	-			

☞ The module employed in this table is divided into eighteen parts.



It may be seen by the plan that these volutes are inclined, and partake of the curvature of the abacus.

The plan of the Composite capital should be disposed in the same manner as that of the Corinthian, at the same time paying great attention to pursue the same method for the elevation of the corresponding points. The parts of the capital, as shown in plate 19, are as follows:

A. Plan seen in face.
B. Plan seen upon the angle.
C. Vase or body of the capital.
D. First range of leaves.
E. Second range of leaves.
F. Volutes.
G. Flower.
H. Abacus.

TO OBTAIN A PROPORTIONAL GRADATION OF THE ORDERS.

Plate 22.

To compare the orders of architecture with each other, take a line of any convenient dimension for the height of the Tuscan order, and divide it into nineteen equal parts, four of which will give the

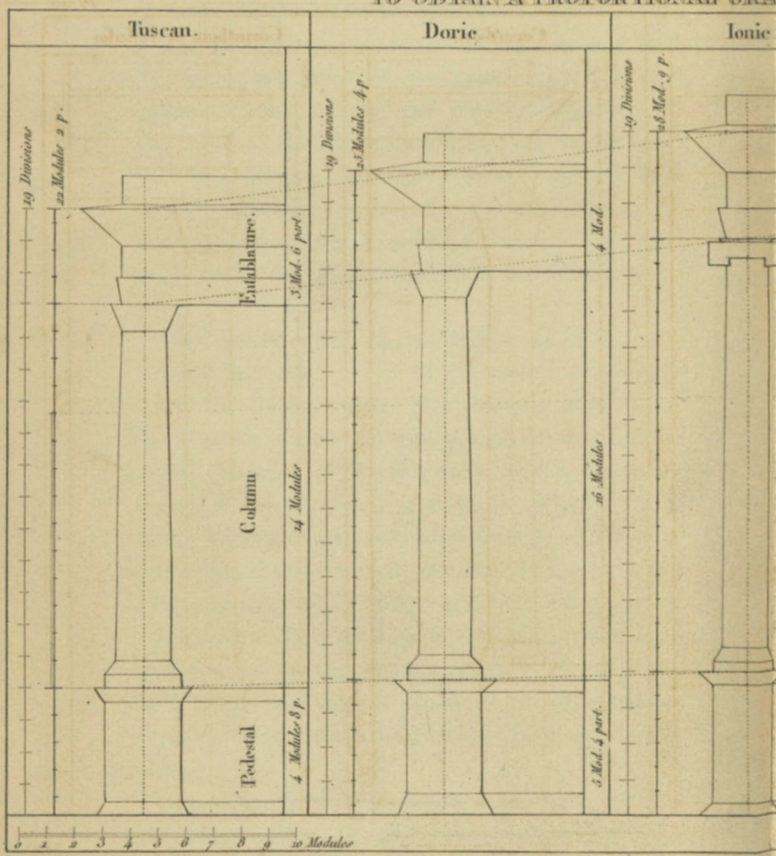
height of the pedestal, twelve that of the column, and three that of the entablature.

The module adopted for the Tuscan order being the fourteenth part of the total height of the column, it follows that the nineteen divisions of the entire of the order should be thus subdivided: the four divisions of the pedestal will be four modules and eight parts; the twelve divisions of the columns fourteen modules; lastly, the three divisions of the entablature three modules and six parts.

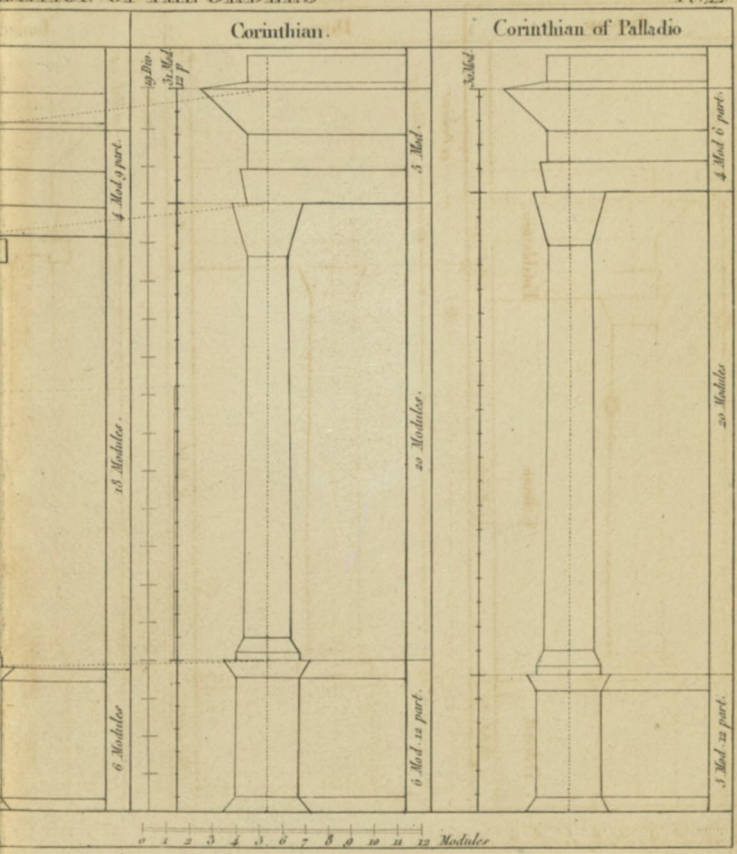
To determine the relative height of the Corinthian order, take a line of ten modules in length from the Tuscan scale, and divide it into twelve equal parts, which will give a scale of modules for the Corinthian. From this scale erect a perpendicular line of thirty-one modules and twelve parts, at any convenient distance from the axis of the Tuscan column, and divide it into nineteen equal parts; the four divisions for the pedestal will then be equal to six modules and twelve parts, the three divisions for the entablature equal to five modules, and lastly, the twelve divisions for the column equal to twenty modules of the scale of the Corinthian.

Having proceeded thus far, raise at equal distances between them two other vertical lines, to form the axis of the Doric and Ionic orders. Draw a line from the top of the axis of the Corinthian

TO OBTAIN A PROPORTIONAL GRA

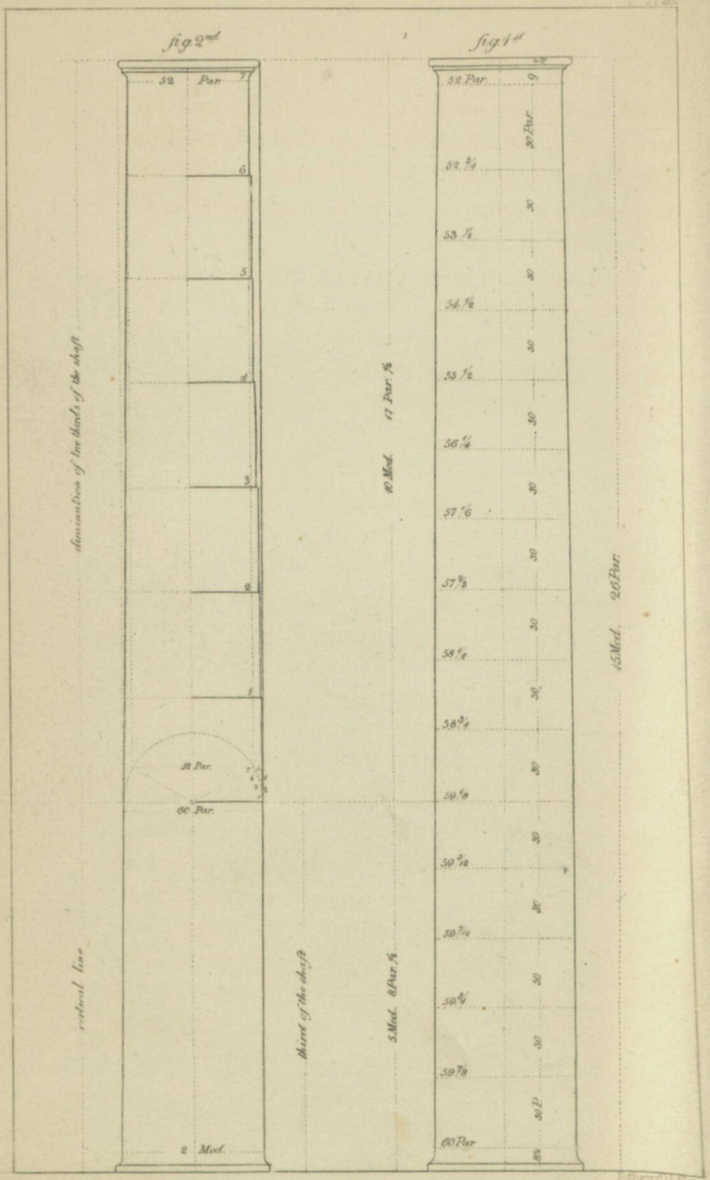


To obtain a proportional Gradation of the Orders the Scale of Ten Modules must be taken & divided into twelve which



the Tuscan Order must be first determined from which
ll give the Scale to fix the total height of the Corinthian Order.

DIMINUTION OF COLUMNS



ANOTHER METHOD FOR THE DIMINUTION OF COLUMNS.

DIMINUTION OF THE COLUMNS IN THE INTERIOR OF THE PANTHEON AT ROME.

order to the top of that of the Tuscan, and the points of intersection between this line and the two axes of the Doric and Ionic will give the corresponding heights of the parts of these intermedial orders, as is shown in plate 22.

The Composite order being of the same dimensions as the Corinthian, it was considered better to substitute upon the same plate the proportions of the Corinthian of Palladio, as presented by some of the edifices erected in Italy.

DIMINUTION AND ENTASIS OF THE SHAFTS OF COLUMNS.

Plate 23.

THE ancients have diminished and imperceptibly curved the outline of the shafts of their columns, commencing either from a third of the height of the shaft, taken from the top part of the superior torus of the base, or otherwise from its lower diameter, (and likewise the astragal, if there be one,) to the under part of the astragal upon which the capital is placed. The fillet over the base

always forms a part of the shaft, as also does the astragal at the upper extremity, the projection of which from the centre of the column always corresponds to half the lower diameter of the shaft, which is of one module. The outline of those which diminish from the bottom to the top is not precisely straight, but is slightly curved, as may be seen by the first figure. The second example is most practised, and may be employed when the diminution is intended to commence from one-third of the height. In fine, this last means may serve for any height with the same success, by multiplying the divisions from the inferior to the superior diameter.

A TABLE

OF THE DIMINUTION OF COLUMNS,

TAKEN FROM

THE BEST ANTIQUE EXAMPLES.

SHAFTS OF COLUMNS.		OF THE SHAFTS. Proportion. Modules.	Parts.	Fractions	Height. Feet.	Inches.	Diminution. Parts.	Fractions.
Doric.	Theatre of Marcellus	14	15	3/20	23	4 3/4	12	
	Colosseum	16	22	..	24	4 1/2	4	
Ionic	Temple of Fortuna Virilis	15	10	..	24	4 3/4	7	
	Temple of Concord	17	6	..	38	5	10	
	Theatre of Marcellus	16	10	1/2	21	1	9	
	Colosseum	15	23	1/4	23	6 3/4	6	..
Corinthian.	Temple of Jupiter Tonans	17	4	3/20	39	3 1/2	8	..
	Temple of Jupiter Stator	17	..	..	40	8	8	..
	Interior of the Pantheon	15	26	..	29	4	8	..
	Altars of the Pantheon	15	23	..	11	7 1/2	8	..
	Portico of the Pantheon	16	8	..	40	2 1/4	7	..
	Temple of Vesta	18	24	..	29	3	6	..
	Temple of the Sibilla	16	8	..	20	3 1/4	8	..
	Frontispiece of Nero	16	10	3/20	52	5 1/4	7	..
	Temple of Peace	17	10	..	52	6 3/4	6	..
	Colosseum	14	19	1/2	21	4 1/2	5	..
	Temple of Faustina	15	28	..	38	7	7	..
	Basilica of Antoninus	17	..	1/2	40	5	7	..
	Portico of Septimus	22	6	..	28	9	7	..
	Arch of Constantine	15	25	..	23	1/4	7	..
Composite.	Arch of Titus	16	22	..	17	4	7	..
	Arch of Septimus	16	..	..	23	1 1/2	7	..
	Thermæ of Dioclesian	16	17	1/2	38	4 1/2	8	..
	Temple of Bacchus	15	23	..	11	5	6	..

The diminution of the shafts of the columns, in all the antique edifices at Rome, commences from their inferior diameters; except in those at the Colosseum, Arches of Severus and Constantine, and Temple of the Sibilla, at Tivoli, where it commences from a third of their height.

N. B. The above Table presents both the height and proportion of each of the shafts of the different orders of columns it contains, thereby to facilitate the comparison of their diminution here given, which is of the whole of the superior diameter of the shaft. And the module employed is divided into thirty parts.

RULES OF PROPORTION FOR THE DIMINUTION WHICH SHOULD BE GIVEN TO THE SUPERIOR DIAMETER OF THE SHAFTS OF THE DIFFERENT COLUMNS, ACCORDING TO THEIR HEIGHT, FROM FIFTEEN FEET TO FIFTY.

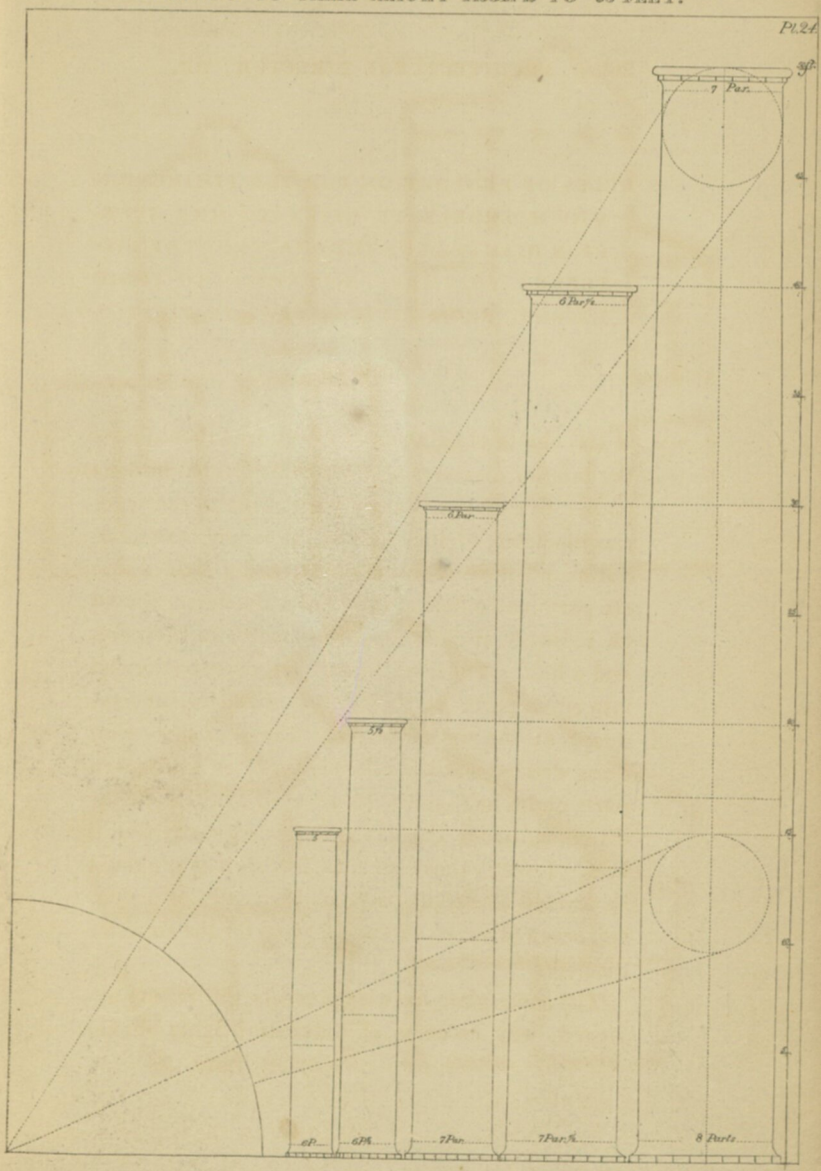
Plate 24.

THE shafts of columns of fifteen feet should have the inferior diameter of their shaft divided into six parts: five of these same parts given to the superior diameter of the shaft will determine the diminution. Those of twenty feet, being divided into six parts and a half at their lower diameter, should be reduced at their upper diameter to five parts and a half. Those of thirty feet must be divided into seven parts at their lower diameter, and reduced at the upper to six. Those of forty feet, being divided at their inferior diameter into seven parts and a half, must be reduced at the superior diameter, under the astragal, to six parts and a half. Lastly, those of fifty feet in height should be divided into eight parts at their inferior diameter, seven of which should be given for the superior diameter.

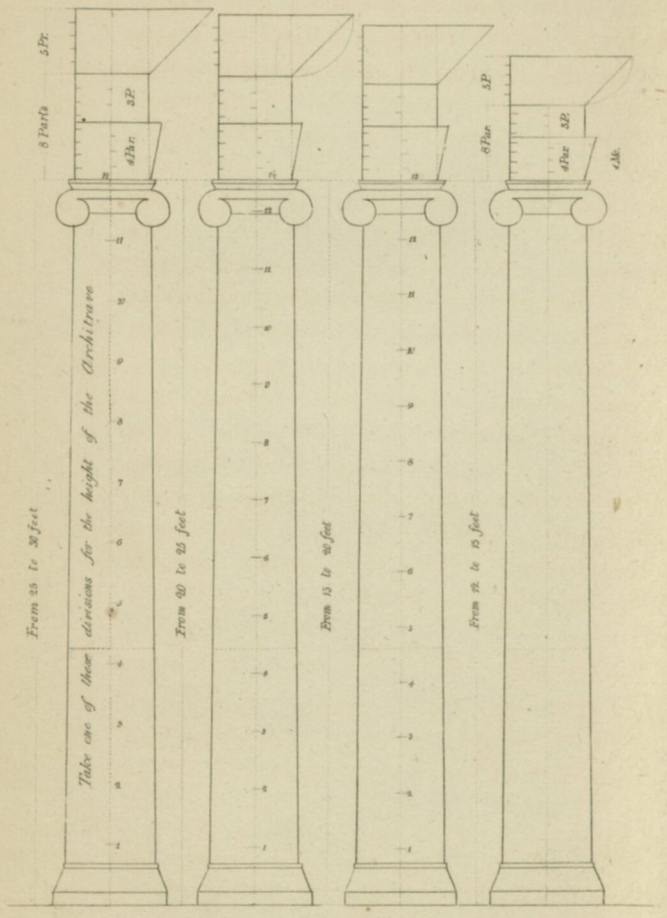
The same plate likewise presents the reason assigned, why columns of different heights should

DIMINUTION OF THE SHAFTS OF COLUMNS,

ACCORDING TO THEIR HEIGHT FROM 15 TO 50 FEET.



PROPORTION OF ENTABLATURES ACCORDING TO THE HEIGHTS OF COLUMNS.


From 25 to 30 feet
Take one of these divisions for the height of the Architrave
From 20 to 25 feet
From 15 to 20 feet
From 12 to 15 feet

vary in their diminution, by showing that the lines which proceed from that part of any object which is situated at a considerable elevation, forms a more acute angle to the sight than those connected with one of equal dimensions, but which is less elevated.

These are the rules and opinions given by Vitrutius, yet the remains of antiquity do not furnish us with examples where they have been strictly applied (see the table, page 265,) which serves to show that rules of this kind, as well as all others, require in their application suitable modification, according to the attendant circumstances, of which the judgment of the artist can alone determine.

These different proportions do not change in the least those fixed upon for modern capitals. Those which are antique may be consulted under the different relations of the heights of the columns, nearly all of which vary, either in their general proportions, or in those of their details. (See the table of each of the orders.)

PROPORTION OF ENTABLATURES, ACCORDING TO THE HEIGHTS OF THE COLUMNS, AFTER THE MANNER OF VITRUVIUS.

Plate 25.

FOR columns from twelve to fifteen feet high, the architrave should have half a diameter in

height; and, dividing the architrave into four parts, three should be given for the height of the frieze. Those from fifteen to twenty feet should be divided into thirteen parts, one of which will be the height of the architrave. Divide this part into four others, and appropriate three for the height of the frieze. For those from twenty to twenty-five feet, the columns must be divided into twelve parts and a half, and one of these parts will be the height of the architrave. The frieze has the same proportion as the example last mentioned.

Columns from twenty-five to thirty feet must have their height divided into twelve parts: one of these parts will give the height of the architrave. The frieze has the same proportion as the preceding example.

If it is wished to place a basso-relievo, or any other ornament, on the frieze, it is then necessary to make it equal to the whole height of the architrave, and to give to the cornice such a proportion as is stated below.

The different proportions that Vitruvius assigns for each of the mouldings which compose his entablatures do not coincide with any other adjustment. The proportional heights are as follows. The architrave and frieze, being already determined by the rules before given, must be divided into eight equal parts; and taking five for the height of the cornice, in which height its mould-

ings must be distributed, observe that their total projection, perpendicular from the face of the frieze, must be equal to the height of the cornice; so that if the cornice have two modules in height, it will also have two modules of projection.

The columns on this plate are drawn to an equal height, having only marked on each the relative proportion which ought to exist between the column and entablature, it being considered more easy to judge of the differences in the proportions of entablatures when compared one with another, than when each is compared to its column.

The proportion of entablatures may always be the same with relation to columns; but the members of which they are composed ought to have more or less expression, at all times avoiding confusion, according to their different dimensions.

This rule for the entablatures supported by columns is applicable more or less to those employed in the generality of buildings, which may be characterized either by simplicity or richness, and also by the ordonnance of the details, in such a manner that they will clearly express the character of the order to which they belong, although there be neither columns nor pilasters employed.

INTERCOLUMNIATIONS FOR SACRED AND OTHER PUBLIC EDIFICES, ACCORDING TO VITRUVIUS.

THE intercolumniation for the Ionic order of six columns in front should be six modules, or three diameters, from the axis of one column to that of the other; the centre one being four diameters.

In the Corinthian order of eight columns in front, the intercolumniation should be six modules, or three diameters, from axis to axis; the centre one being three diameters and a half.

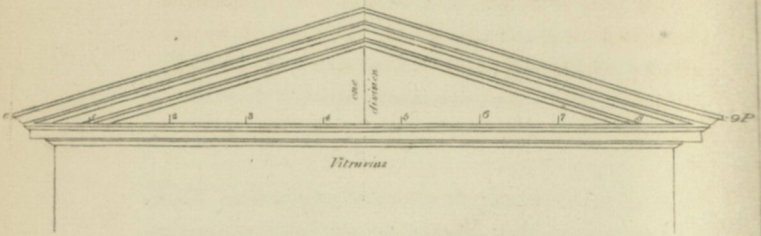
In the Ionic order of eight columns in front, the intercolumniation should be three diameters and a quarter from axis to axis; the centre one five diameters.

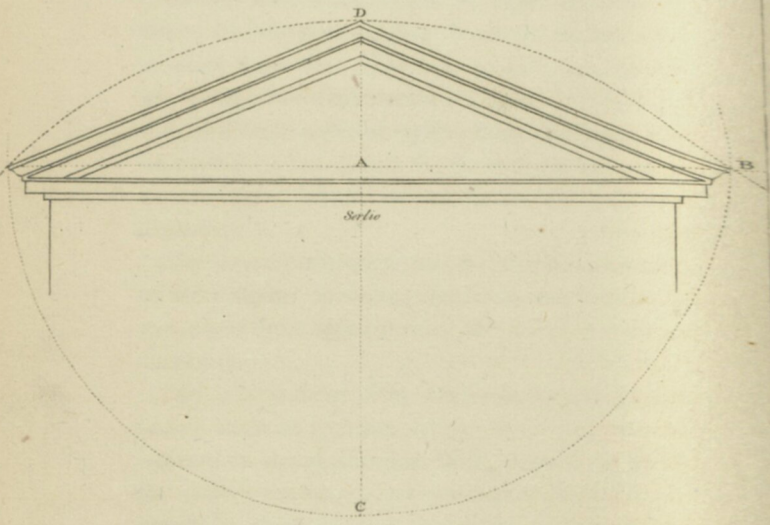
The intercolumniation for the Corinthian order of ten columns in front, should be two diameters and a half from axis to axis; the centre one three diameters.

The reason assigned by Vitruvius for making the centre intercolumniation larger than the others appears to be too frivolous in its object, as by it the entire symmetry of an ordonnance is sacrificed merely to allow of (and that from only a single point of sight) the whole of the aperture of the entrance door being seen.

PROPORTION OF PEDIMENTS.

Pl. 26.





Fothergill Sc.

The only principle of taste that can be advanced as regards intercolumniations, is governed by the effects which ought to characterize the compositions in which they are employed.

PEDIMENTS, ACCORDING TO VITRUVIUS.

Plate 26.

IF it be required to crown these intercolumniations with pediments, it is necessary, after having determined the proportion of the entablature, (whether it be a fourth, or between a fourth and a fifth, or a fifth of the height of the columns, or of whatever other proportion it may be,) to divide the space which there may be in the whole length of the cornice, from the extremity of one cyma to the other, which form the opposite angles, into nine equal parts, taking one for the height of the tympanum, and placing the height for the cornice above it, observing that the tympanum is measured from the top part of the fillet which covers the small cyma.

Between Vitruvius and Scamozzi there exists a medium proportion, which is given by Serlio: it

consists in taking for a point of centre the half of the space, A, between each extremity of the cyma, forming the two extremities of the cornice, B, marking it below by intersecting the perpendicular, C, of the centre; opening the compasses from this point to the extremities of the cymas, B, and describing a segment of a circle, passing through the upper part of the perpendicular line of the centre. The intersection D will give the height of the pediment, the cornice being also included.

In fine, the proportion of pediments is subordinate to the climate, as well as to the order to which they are applied, and also to the extended or limited dimensions of their base. But as two extreme terms, their height may be varied from one-fourth to one-sixth of the length of their base.

A TABLE

OF THE

INCLINATION OF PEDIMENTS AND ROOFS,

FROM

ANTIQUE AND MODERN EDIFICES.

			Degrees.
Antique Edifices.	Athens.	Temple of Minerva	16
		Temple of Erectheus	15½
		Temple of Theseus	15
		Propylea	14½
	Rome.	Portico of Septimus Severus	23
		Temple of Concord	23½
		Temple of Mars the Avenger	23½
		Temple of Fortuna Virilis	24
		Temple of the Pantheon	24
		Temple of Antoninus and Faustina	24½
Modern Edifices.	Rome.	Roof of the Basilica of S. Paolo fuori delle mura	23
		Roof of the Academy of France, at Rome	23
		Roof of the Theatre D'Argentina	24½

INTERCOLUMNIATIONS, EQUALLY DISTANCED, FOR EDIFICES OF LESS IMPORTANCE, ACCORDING TO VITRUVIUS.

CORINTHIAN order of six columns in front, five modules, or two diameters and a half, from axis to axis.

Ionic order of six columns in front, six modules, or three diameters, from axis to axis.

Ionic order of four columns in front, eight modules, or four diameters, from axis to axis.

Doric order of four columns in front, ten modules, or five diameters, from axis to axis.

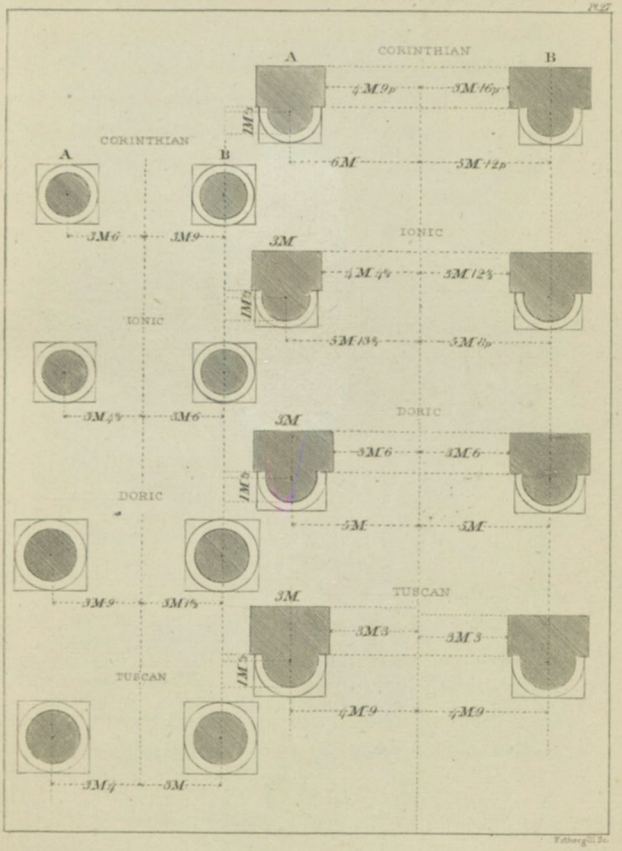
Ionic order of four columns in front, six modules and a half from axis to axis; the centre one eight modules.

The Doric intercolumniations are governed by the division of the triglyphs.

INTERCOLUMNIATIONS.

THE plates 27 and 32, fig. A, present the distances which ought to be observed for each order between the axis of the columns of porticos, and those applied to arcades, according to Vignola. Fig. B represents the intercolumniations arranged to one common axis, so as to facilitate their execution, when it is found necessary to employ them in the same façade. The plates 28, 29, 30, 31, 33, 34, 35, and 36, contain the elevations, drawn according to the proportions given in the plans, fig. B, plates 27 and 32.

PLANS OF INTERCOLUMNIATIONS & ARCADES WITH COLUMNS WITHOUT PEDESTALS.



APPLICATION OF COLUMNS TO ARCADES.

ARCHES have been more or less employed in modern architecture according to the country and the nature of the materials which it furnishes. The difficulty of finding architraves of a single block from column to column, or of supplying it by the artifice of voussoirs, at the decline of the antique architecture, had suggested the idea of raising centres of bricks upon detached columns. From thence, doubtless, may be dated the employment of continued arches, which afterwards became so general in the construction of the interiors of spacious churches, which require solid supports for the weight of the vaulted ceilings, and materials destined to serve for their covering or roof.

But arches forming arcades submitted to the proportions of, and decorated with, the several orders of architecture, as employed at the exterior of edifices, have examples in many remains of antiquity, such as the theatres and amphitheatres. They may be employed either with or without pedestals. The models just cited present applications of the last-mentioned manner in their first range, the columns of those above having pedestals which are prolonged between the sides of the aperture of the arcades, and serve as balustrades.

The beautiful remains of the theatre of Marcellus, at Rome, of which there still exists a considerable range of arcades, has doubtless served as a model to the architects of the sixteenth century; and it is from this style and these proportions that both the interior and exterior of the greatest number of palaces were constructed. See table, page 279.

The employment of arcades, considered as galleries, has become almost general in the courts of extensive palaces. Modern Rome presents many examples. Sometimes they are supported by two columns placed under the impost instead of a pier or pillar; at others reposing upon pillars, and forming, round the cortiles, a covered walk, serving likewise as means of communication to the different apartments. The examples are too numerous to permit of being further cited, and the above may be considered as a tolerably correct type of the interior of all the great palaces in Italy.

Arcades are particularly suitable for edifices which require a character combining strength with simplicity; they may be judiciously employed at the exterior of buildings forming public squares or places, markets, &c. as is practised in Italy. There are many cities where arcades are erected on both sides of the streets, so as to form a cover to the causeways, which is productive of as much utility and comfort as of beauty.

There are again other examples of two ranges of arcades one upon the other. Such was originally the immense interior of the court of the Vaticano, by Bramante; the apertures of which were afterwards obliged to be filled, to remedy the lightness of the construction. Such is also the beautiful court of the palace of the Cancelleria, by the same architect, which is composed of arcades of greater elegance, supported by columns of marble. At the head of these examples the court of the *loggie*, at the Vaticano, the architecture of Raphaello, must not be forgotten, which consists of three ranges of open galleries, the one above the other.

Amongst the most classical productions of this kind is the interior of the court of Farnese palace, by Vignola, where the beauty of the proportions, forms, and construction, rivals any thing of the same kind ever executed. See table, page 279.

The proportions of arcades decorated with orders of architecture vary according to the order applied, which determines the dimensions, forms, and taste. In the Tuscan, which the moderns have distinguished from the Doric by a greater appearance of simplicity, the arcade has no archivolt, and but a simple band for an impost. The same order with a pedestal has an architrave and impost, less simple than that without

pedestal, which is the case with all the arcades of Vignola. See plates 28, 33, and 37.

The Doric arcade is ornamented with an archivolt of two fascias, crowned with a few mouldings: the same mouldings are used in the impost. See plates 29, 34, and 37. The Ionic arcade has ornaments less simple than those of the Doric, and is further distinguished by a key in form of a console. See plates 30, 35, and 37. The Corinthian and Composite arcades have their archivolts and imposts still more ornamented. See plates 31, 36, and 37. The proportions of these arcades are determined, as regards their heights, by those of the columns which are applied to them: thus the Tuscan arcade is the lowest of all, and the Corinthian the highest.

A COMPARATIVE TABLE

OF THE

RESPECTIVE RELATIONS IN THE HEIGHTS OF COLUMNS

When employed above each other with Arcades in the same Facade,

TAKEN FROM THE MOST CELEBRATED ANTIQUE AND MODERN EXAMPLES.

	Theatre of Marcellus, at Rome. Height of the Parts.			*Colosseum at Rome.* Height of the Parts.			*Barbarini Palace, at Rome.* Height of the Parts.			*Farnese Palace, at Rome.* Height of the Parts.		
	Feet.	Inches.	Lines.*	Feet.	Inches.	Lines.	Feet.	Inches.	Lines.	Feet.	Inches.	Lines.
Corinthian. Entablature	....	..	..	6	7	3	4	7	2	....	..	..
Column	....	..	..	25	7	..	20	9	6	....	..	..
Pedestal	....	..	..	6	4	9	4	5	..	....	..	..
	-	-	-	38	7	-	29	9	8	-	-	-
Superior and inferior diameters of the Columns	-	-	-	2	7	11	1	11	10	-	-	-
				2	10	10						
Ionic. Entablature	6	4	2	6	7	5	4	9	5	4	11	7
Column	23	6	2	25	8	9	21	6	4	19	6	1
Pedestal	4	..	5	6	11	5	3	8	2	3	8	2
	33	10	9	39	3	7	29	11	11	28	1	10
Superior and inferior diameters of the Columns	2	2	3	2	5	..	1	9	10	1	9	4
	2	7	4	2	10	10	2	2	7	2	1	9
Doric. Entablature	6	2	5	6	6	7	5	3	3	5	4	9
Column	24	11	4	27	8	9	22	11	7	22	6	4
Pedestal	1	7	2	3	5	..	1	6	1	1	4	0
	32	8	11	37	8	4	29	8	11	29	3	1
Superior and inferior diameters of the Columns	2	6	7	2	8	2	2	3	0	2	4	8
	3	2	4	2	10	10	2	7	4	2	8	4

When columns are employed above each other, the same line of axis is generally observed. For the intercolumniations and proportions of the apertures of the arcades, see the tables and plates of the orders.

* The line employed in this work is the twelfth part of an inch.

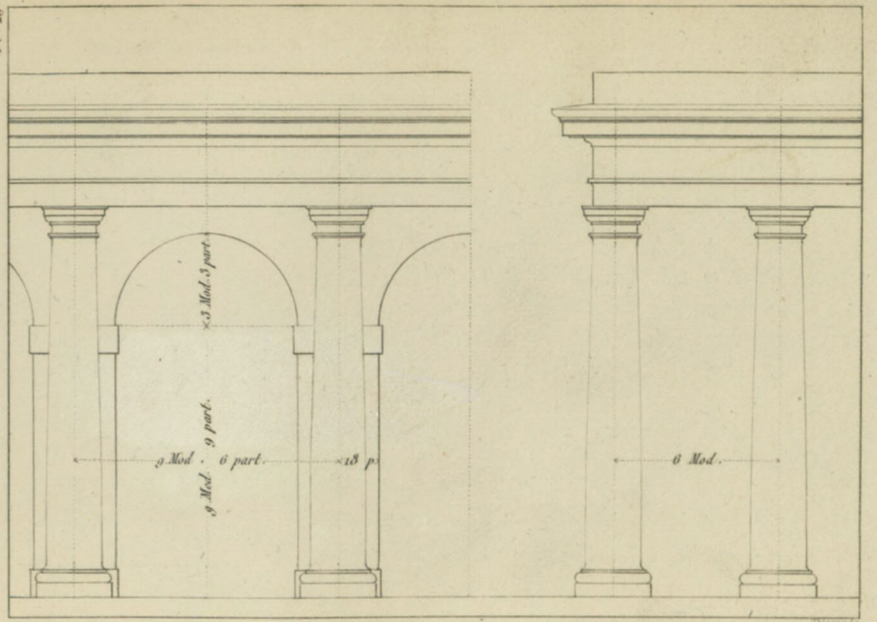
OF RUSTICS.

THERE are but few examples of rustics or bossages preserved amongst the antiquities of Greece, amongst which are those employed in the basement of the monument at Athens, named the lantern of Demosthenes. The grooves are little sunk, forming compartments that express a greatness of division. The same species (see plate 50, fig. 7,) have often been suitably employed in a great number of the ancient edifices erected in the Roman empire. The mausoleum of Cecilia Metella, which is circular in its plan, presents them at its exterior. This style was introduced into almost all the edifices erected at this period, of which the temple at Nismes named the Maison quarèe presents an example, the walls of which are exteriorly wrought after this manner.

This style is employed with much discretion and judicious arrangement in the antique edifices of Italy. They generally present themselves in walls serving as inclosures to edifices, which is doubtless where they are most suitable, and in basements, or any part which occupies the situation of a support. The most admirable example of this style is the immense wall that incloses the forum of Nerva. Others are found at the aqueduct of Clau-

TUSCAN ORDER.

Pl. 28

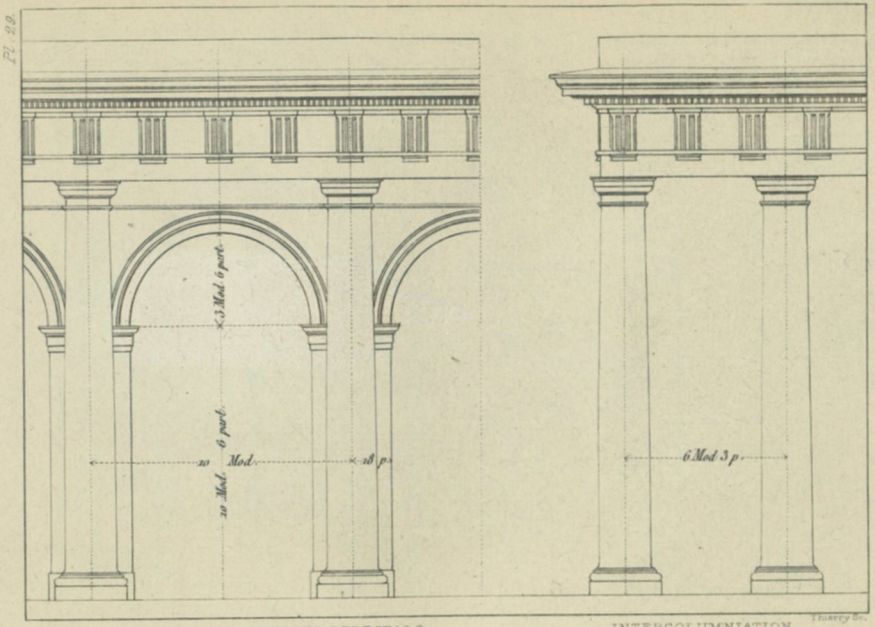


ARCADES WITH COLUMNS WITHOUT PEDESTALS. INTERCOLUMNIATION

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 Modules

DORIC ORDER.

Pl. 29.



ARCADES WITH COLUMNS WITHOUT PEDESTALS.

INTERCOLUMNIATION.

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 Modules.

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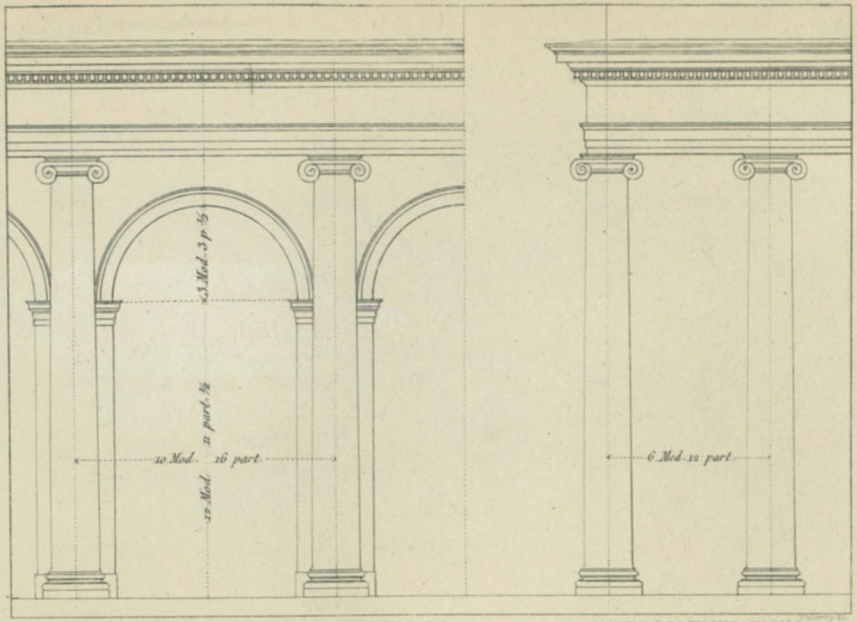
IONIC ORDER.

Pl. 30



ARCADES WITH COLUMNS WITHOUT PEDESTALS. INTERCOLUMNIATIONS.

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 Modules

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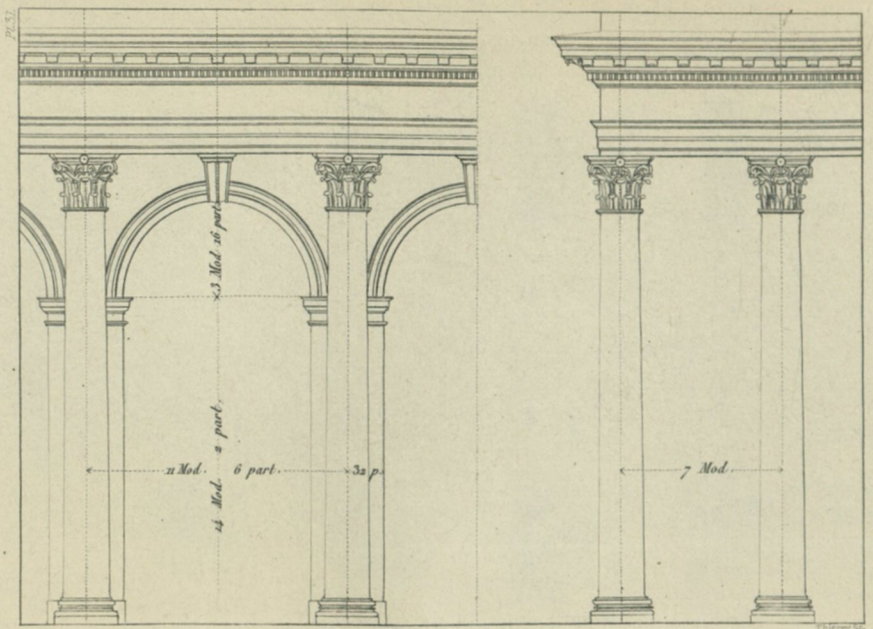
CORINTHIAN ORDER.



ARCADES WITH COLUMNS WITHOUT PEDESTALS. INTERCOLUMNIATION.

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 Modules

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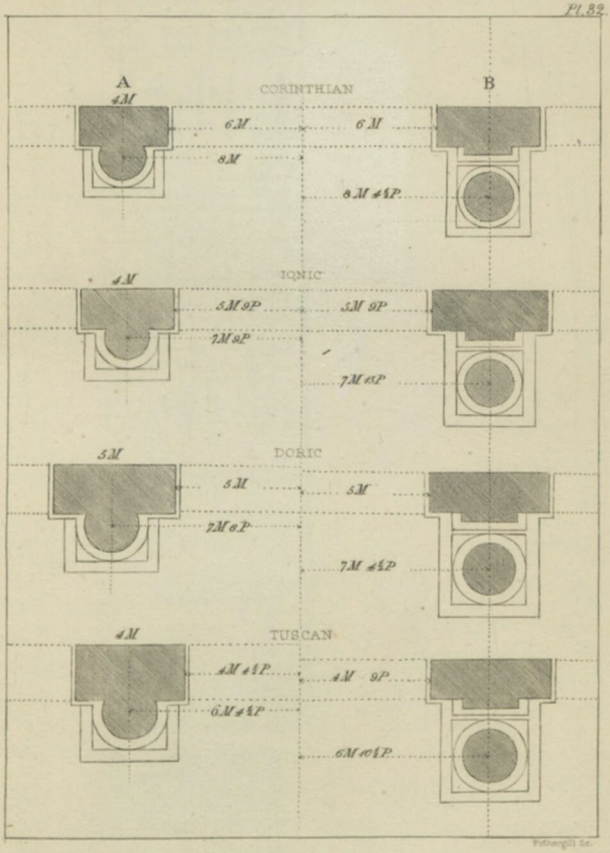
PLANS OF ARCADES WITH COLUMNS & PEDESTALS

Pl. 32



A COMPARATIVE TABLE

OF THE

GENERAL PROPORTIONS ASSIGNED TO THE TUSCAN ORDER

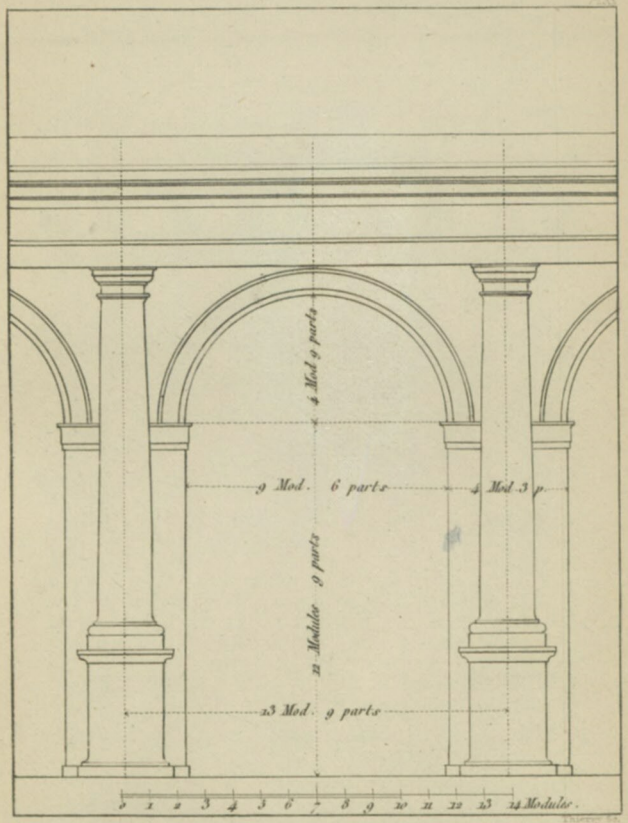
BY THE MOST EMINENT MODERN MASTERS.

	PALLADIO.						SCAMOZZI.						SERLIO.						VIGNOLA.					
	Height of the Members.			Projection from the axis of the Columns.			Height of the Members			Projection from the axis of the Columns.			Height of the Members.			Projection from the axis of the Columns.			Height of the Members.			Projection from the axis of the Columns.		
	Modules.	Parts.	Fractions.	Modules.	Parts.	Fractions.	Modules.	Parts.	Fractions.	Modules.	Parts.	Fractions.	Modules.	Parts.	Fractions.	Modules.	Parts.	Fractions.	Modules.	Parts.	Fractions.	Modules.	Parts.	Fractions.
Entablature { Cornice	1	13	$\frac{1}{30}$	2	6	..	1	11	..	2	4	..	1	..	..	1	22	..	1	10	..	2	9	..
Entablature { Frieze	..	26	..	....	22	..	1	9	..	....	22	..	1	..	..	....	22	..	1	5	..	....	24	..
Entablature { Architrave	1	5	..	....	27	..	1	2	..	....	26	..	1	..	..	....	22	..	1	..	..	....	24	..
	3	4	$\frac{1}{30}$	-	-	-	3	22	$\frac{1}{30}$	-	-	-	3	-	-	-	-	-	3	15	-	-	-	-
Column { Capital	1	..	..	1	..	..	1	..	..	1	1	..	1	..	..	1	..	..	1	..	..	1	6	$\frac{1}{30}$
Column { Shaft	12	..	..	{.. / 1	22 / ..	$\frac{1}{30}$ / ..	13	..	..	{.. / 1	22 / ..	$\frac{1}{30}$ / ..	10	..	..	{.. / 1	22 / ..	$\frac{1}{30}$ / ..	12	..	..	{.. / 1	24 / ..	.. / ..
Column { Base	1	..	..	1	10	..	1	..	..	1	9	..	1	..	..	1	12	..	1	..	..	1	11	$\frac{1}{30}$
	14	-	-	-	-	-	15	-	-	-	-	-	12	-	-	-	-	-	14	-	-	-	-	-
Height of the Column and Entablature	17	14	$\frac{1}{30}$	....	..	..	18	22	$\frac{1}{30}$	....	..	..	15	..	..	....	..	..	17	15	..	....	..	..
Pedestal { Cornice	..	..	..	....	..	..	..	22	$\frac{1}{30}$	1	14	..	..	..	..	....	..	..	..	15	..	1	21	$\frac{1}{30}$
Pedestal { Die	2	..	..	1	13	..	2	..	..	1	9	..	..	..	..	....	..	..	3	8	..	1	11	$\frac{1}{30}$
Pedestal { Base	..	..	..	....	..	..	1	..	..	1	12	..	..	..	..	....	..	..	..	15	..	1	21	$\frac{1}{30}$
	2		-	-	-	-	3	22	$\frac{1}{30}$	-	-	-	-	-	-	-	-	-	4	8	-	-	-	-
	Height of Members.			From face of Arcades.			Height of Members.			From face of Arcades.			Height of Members.			From face of Arcades.			Height of Members.			From face of Arcades.		
Impost	1	4	$\frac{1}{30}$	....	16	..	..	27	$\frac{1}{30}$	....	9	$\frac{1}{30}$	..	..	..	....	..	..	1	..	..	....	7	..
Archivolt	..	26	..	....	3	..	..	25	..	....	4	..	..	..	..	....	..	..	..	25	..	....	3	..
Key of Arcades without Pedestals	..	..	..	....	..	..	1	4	..	....	..	..	..	..	..	....	..	..	..	..	..	....	..	..
Key of Arcades with Pedestals	..	..	..	....	..	..	1	16	..	....	..	..	..	..	..	....	..	..	..	..	..	....	..	..
	Height.			Width.			Height.			Width.			Height.			Width.			Height.			Width.		
Intercolumniations from axis to axis	..	..	..	10	..	..	..	..	..	{6 / 8	20 / ..	..	..	..	..	10	..	..	..	..	..	6	20	..
Columns of Arcades without Pedestals, from axis to axis	..	..	..	....	..	..	..	..	..	12	..	..	..	..	..	....	..	..	..	..	..	9	15	..
Apertures of Arcades without Pedestals	..	..	..	....	..	..	14	26	..	7	20	..	..	..	..	....	..	..	13	..	..	6	15	..
Columns of Arcades with Pedestals, from axis to axis	..	..	..	12	25	..	..	..	..	13	10	..	..	..	..	....	..	..	..	..	..	12	22	$\frac{1}{30}$
Apertures of Arcades, with Pedestals	15	10	..	9	13	..	17	6	$\frac{1}{30}$	8	20	..	..	..	..	....	..	..	8	22	$\frac{1}{30}$	17	15	..

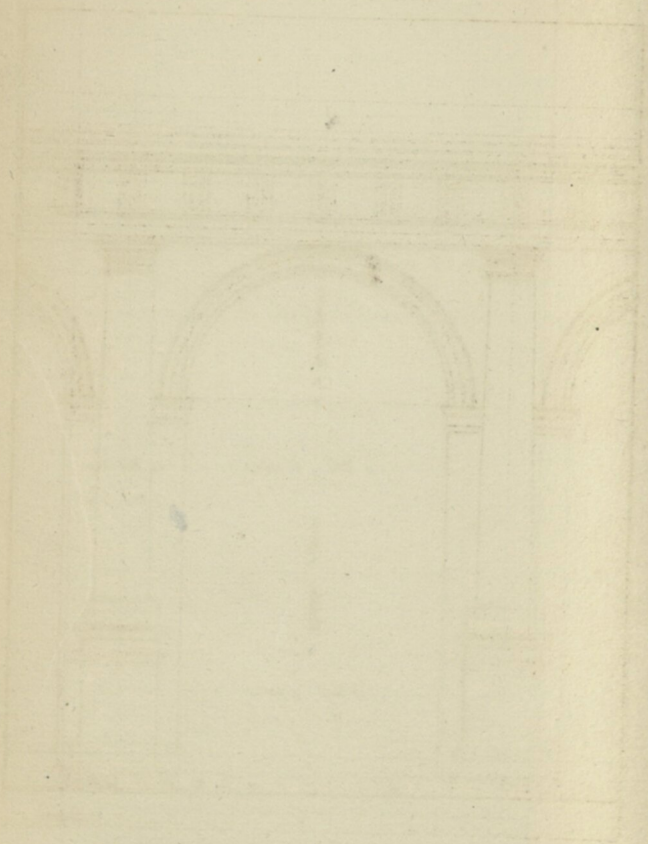
There being no existing remains of the Tuscan order amongst the antiquities, it is only possible to present in this Table the opinion of the most celebrated modern masters; who, with the exception of Vignola, have divided the module into thirty parts or minutes. To form a correct comparison, therefore, it is necessary that his also be subjected to the same divisions,—except in the detailed Tables and Plates, where the method of Vignola has been strictly adhered to, namely, of dividing the modules of the Tuscan and Doric orders into twelve parts, and those of the Ionic, Corinthian, and Composite into eighteen. The projections for all the orders are taken from the axis of the Columns to the farthest projecting point of each Member.

The Arcades of Scamozzi, with Columns without Pedestals, have a socle under their base one module in height, and one module twelve parts in projection taken from the axis of the Column.

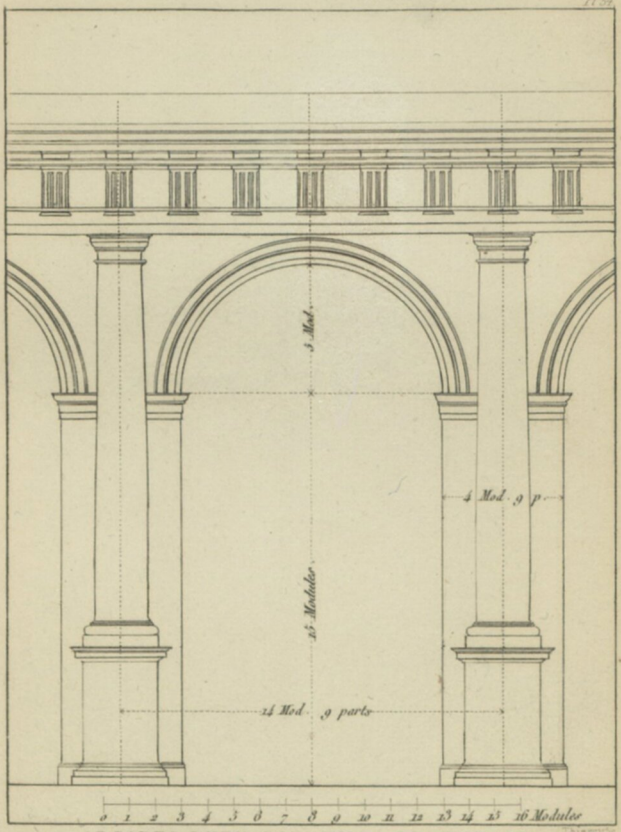
TUSCAN ORDER.



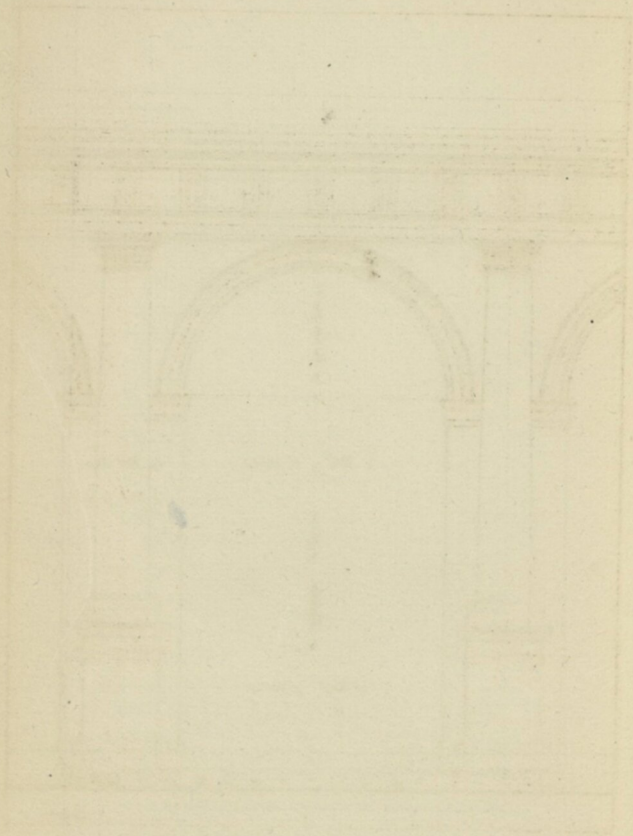
ARCADES WITH COLUMNS AND PEDESTALS.



DORIC ORDER.

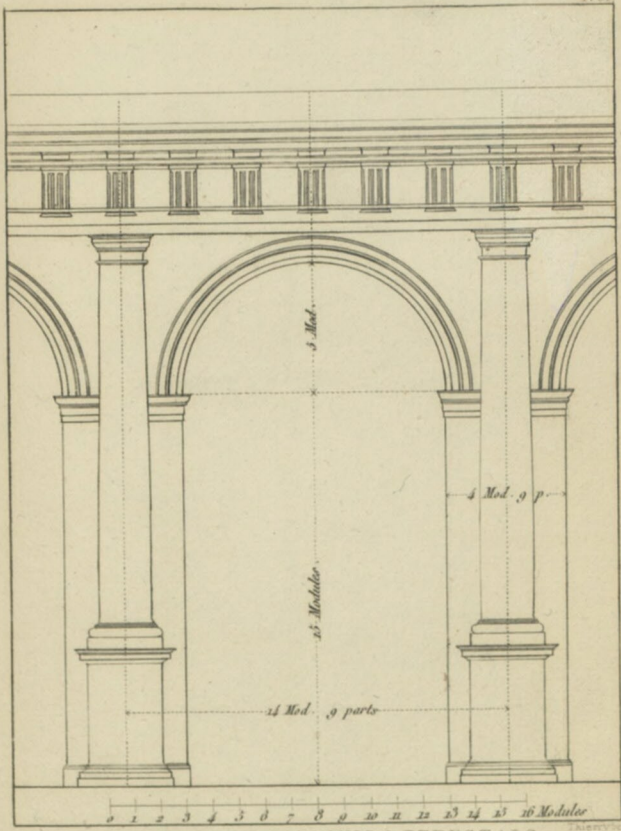


ARCADES WITH COLUMNS & PEDESTALS.



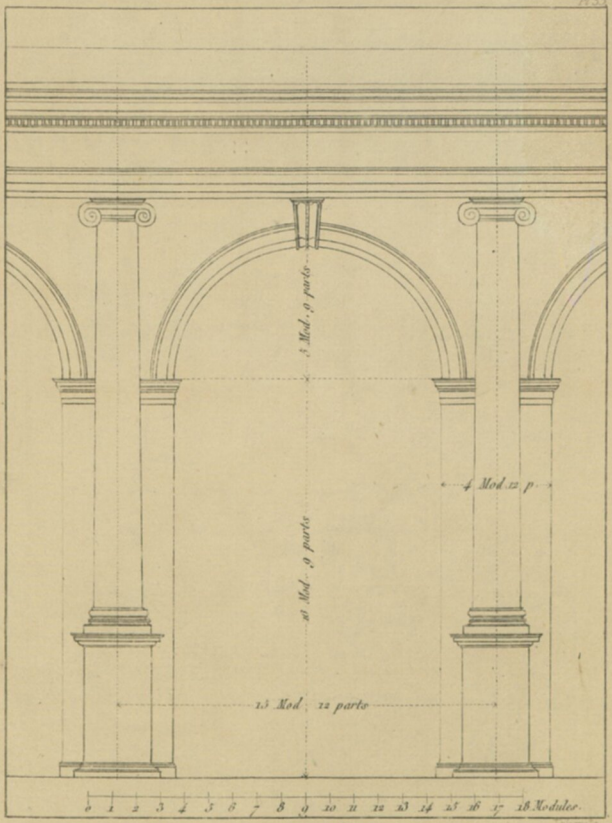
DORIC ORDER.

1734

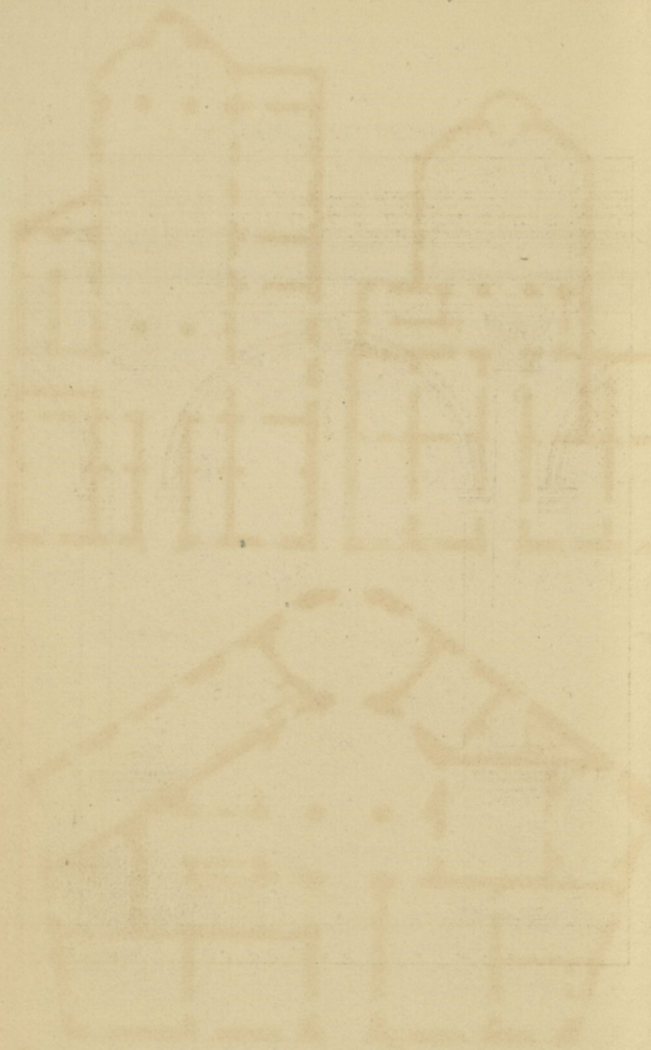


ARCADES WITH COLUMNS & PEDESTALS.

IONIC ORDER.

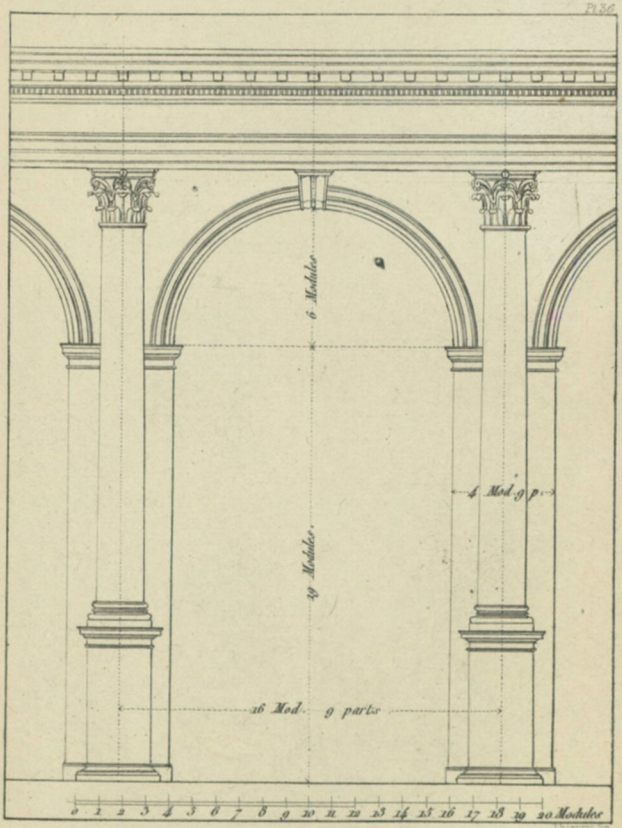


ARCADES WITH COLUMNS & PEDESTALS.



CORINTHIAN ORDER.

Pl 36



ARCADES WITH COLUMNS AND PEDESTALS.

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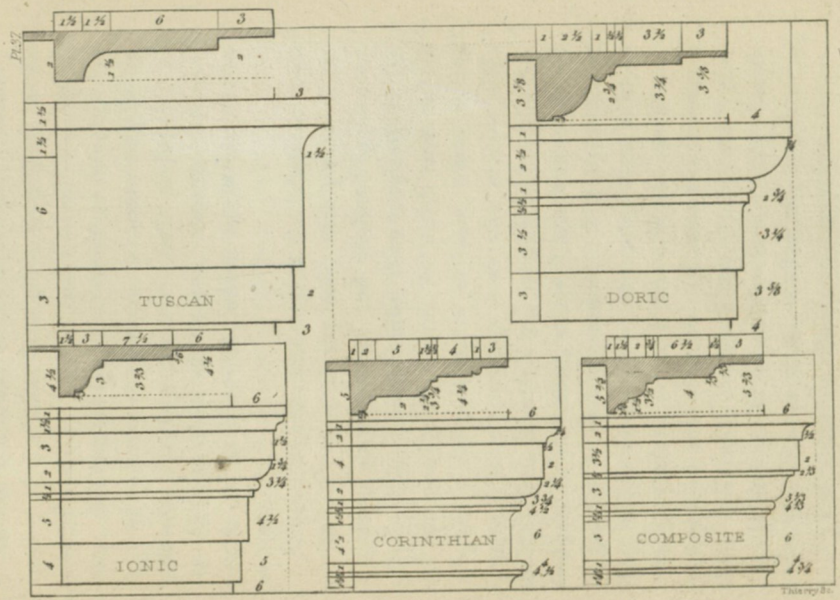
IMPOSTS AND ARCHIVOLTS OF THE FIVE ORDERS.



dius, and the arch of Drusus, which supports a portion of the canal of the aqueduct. There are rustics of a similar description employed in the amphitheatre of Verona, and that of Pola, in Istria. Rustics should never divide or interrupt the face of columns or pilasters, whatever may be the authority for this practice; such examples, as for instance that of Verona, furnish sufficient proofs of an absurdity which ought not to be imitated.

Florence was the first city, at the commencement of the restoration of the arts, that presented examples of an erroneous and confused application of this style, which became more temperate as the art advanced to its revival, at which time it was adopted in different parts of Italy, where it was employed more sparingly, and with greater judgment. From thence it was introduced into the different cities of Europe, where it has been employed in greater or less profusion. For examples of their employment, form, and proportion in basements, arcades, &c. see the different elevations, commencing with plate 56. Rustics and bossages, when judiciously arranged and appropriated, produce in edifices an agreeable effect. They characterize the different parts, distinguish the masses, and serve them as shades of expression; sometimes they are employed in order to produce relief to the pilasters, or to give a value to the parts left

plain; at others to vary the effects of plans by means of their increased or decreased application, so as to render the parts more lively or serious, light or heavy, according to the character required to be expressed, and which is effected by means of their divisions.

Plate 50, fig. 8, presents an example of those suitable for quoins; their angles are of 45 degrees, which produce a soft shadow on the upper, and a strong opposition on the lower face by which they are separated.

OF DOORS.

THE style of decoration, proportion, and taste of the doors which serve as entrances to public edifices, are naturally connected with that of the orders with which they are employed. Vitruvius has made mention of those suitable to temples only, of which he distinguishes three kinds; the Doric, Ionic, and atticurge or Corinthian doors, the soffits of which form straight lines. Their difference consists in some variety in the proportions and in the details given by this author, as regards their relations to the columns of the peristyles of

temples. But that which agrees with a more general and usual theory is, that he prescribes that the profiles of the architrave and crowning members of doors be conformable to the character of simplicity or elegance which characterize each of the orders. Thus the antepagmenta, or architrave of the Doric door, is composed of a very simple band. That of the Ionic has an increase of mouldings, together with crowning members. The atticurge door nearly resembles the last mentioned, except that the jambs are a little inclined; but this would be an inadmissible caprice at the present day. These rules given by Vitruvius, as before observed, were special to temples; but their principle is founded on the harmony which the style or type of architecture expressed in each order ought to prescribe to the parts that enter into the composition, of which the order is the regulator. Almost all the modern authors who have treated on architecture, have endeavoured to fix the form and dimensions of doors, employed in edifices erected according to the principles of architecture, from the proportions and taste of each of the orders. Admitting for a moment, as was the case at the period of the revival of the art, five orders, which have been reduced to three by judicious examination, it results from their observations that the doors of the order named Tuscan (which, together with the four following, are in this instance sup-

posed to have semicircular heads) ought to have twice the width of the aperture in height; those of the Doric, twice and a sixth; those of the Ionic, twice and a fourth; the Corinthian, twice and a half; and the Composite, twice and a third.

The proportion of doors with platbands or straight heads is determined by dividing the width of their apertures into twelve parts, giving twenty-three for the height of the Tuscan doors, twenty-four for the Doric, twenty-five for the Ionic, twenty-six for the Corinthian, and twenty-five and a half for the Composite.

But the general proportion given to doors is twice the width of their aperture in height, as fig. 2, plate 50, one-fifth to a sixth of the width of the aperture for the breadth of the architrave, and one-third to one-fourth of the height for the distance from the soffit of the architrave to the summit of the cornice, that is, from B to A.

This theory relative to the dimensions of doors has, as may be easily discerned, no other object in view than to make the apertures of edifices partake of the measures assigned to the proper character of each order. From whence it results that similar measures have nothing geometrically fixed, as it is the judgment alone that is capable of making suitable applications, and determining the different relations that doors ought to bear with their intended local situation. For examples of

their various forms, proportions, and style of decoration, see the elevations and sections commencing with plate 56.

The plate 40 presents the general proportions, together with the details of the exterior door under the portico of the Pantheon, at Rome. The aperture is a little less than twice its width in height, having the same width at the upper as at the lower part.

In presenting the following plates of doors, from the designs of Vignola, as the most perfect models of their kind, it has been judged necessary to suppress any irregularity of detail which they offered, whether caused by the custom of the period, or the situation in which they were executed; such, for example, as the key-stones of the rustic door interrupting the architrave and frieze. In the Doric door, a second plinth under the bases of the columns, apparently placed there to gain more height in their arrangement; as likewise the projection of the horizontal architrave of the door, beyond the exterior sides of the vertical ones. In the two examples of Corinthian doors the last-mentioned license is suppressed, together with that of a curved frieze; and any other similar errors that the original designs, which have been consulted for the formation of the plates for this work contained have also been suppressed, taking the greatest care never to affect the spirit of the former, but

to enable them to be offered as the best and purest models for imitation.

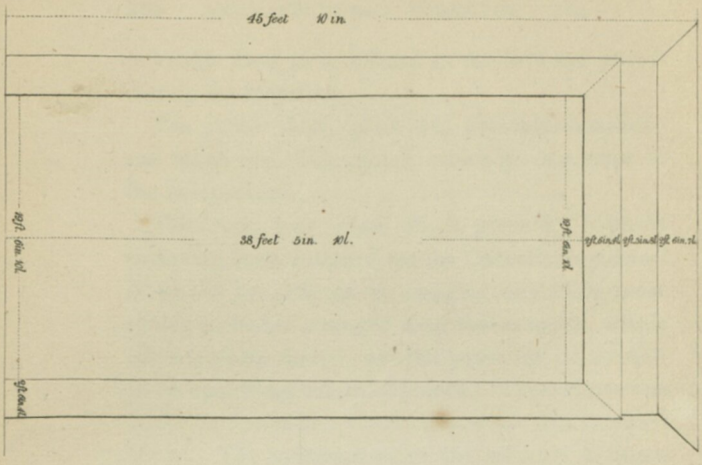
The rustic door, plate 41, presents simplicity and regularity of character, which gives a value to the composition.

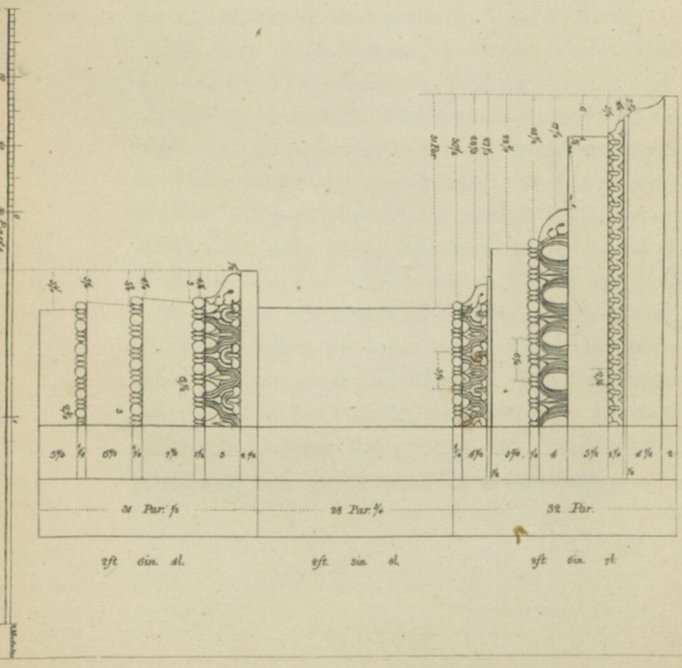
The Doric door, plate 42, is given by Vignola as having been designed for the Cancelleria palace. It would be difficult to imagine any thing more simple or better arranged than this example, which offers nothing forced, all the parts of its composition appearing naturally placed. The order which forms its decoration is taken from his denticulated Doric. The continuation of the astragal between one column and the other gives a finish to the horizontal architrave, that produces a good effect.

The door of S. Lorenzo, in Damaso, plates 43 and 44, may be considered as forming the principal entrance of an edifice, to be a valuable model of its kind. All its proportions are well preserved, and in good relation with each other; and it is susceptible of being enriched by the application of ornaments to its mouldings, according to the character of the edifice to which it is intended to be applied.

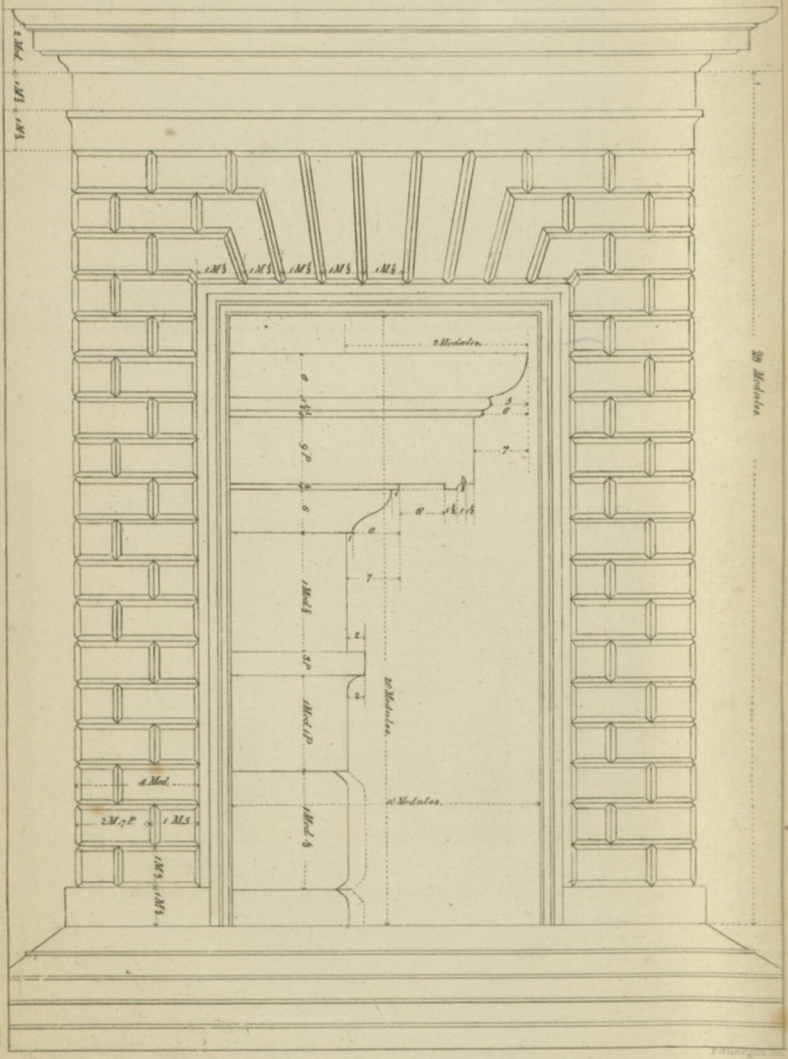
The door of the saloon of Farnese palace, plates 45 and 46, offers the same excellencies as the foregoing example, with this difference, that the former was intended for exterior, the latter for interior decoration, having the general and detailed proportion of their parts regulated accordingly.

DOOR UNDER THE PORTICO OF THE PANTHEON AT ROME.

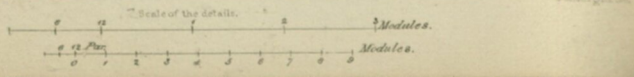




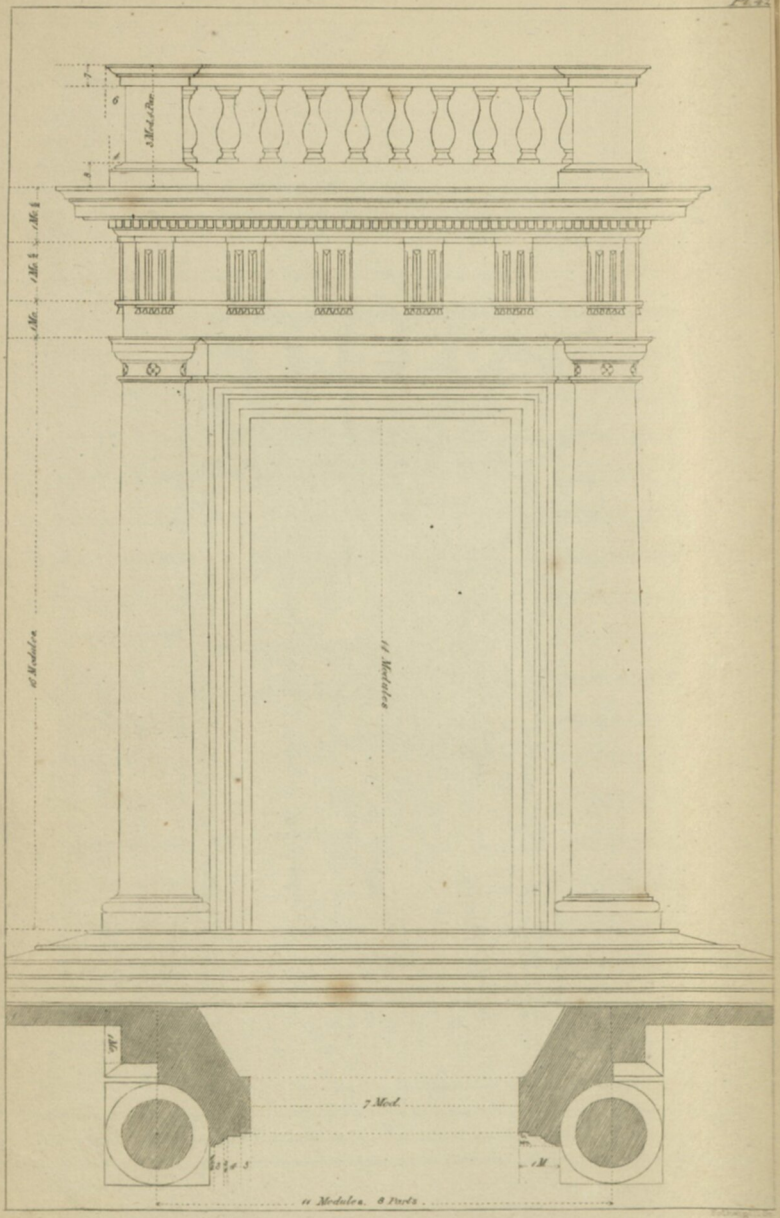
RUSTIC DOOR.

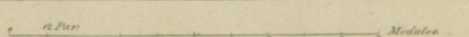


Scale of the details.

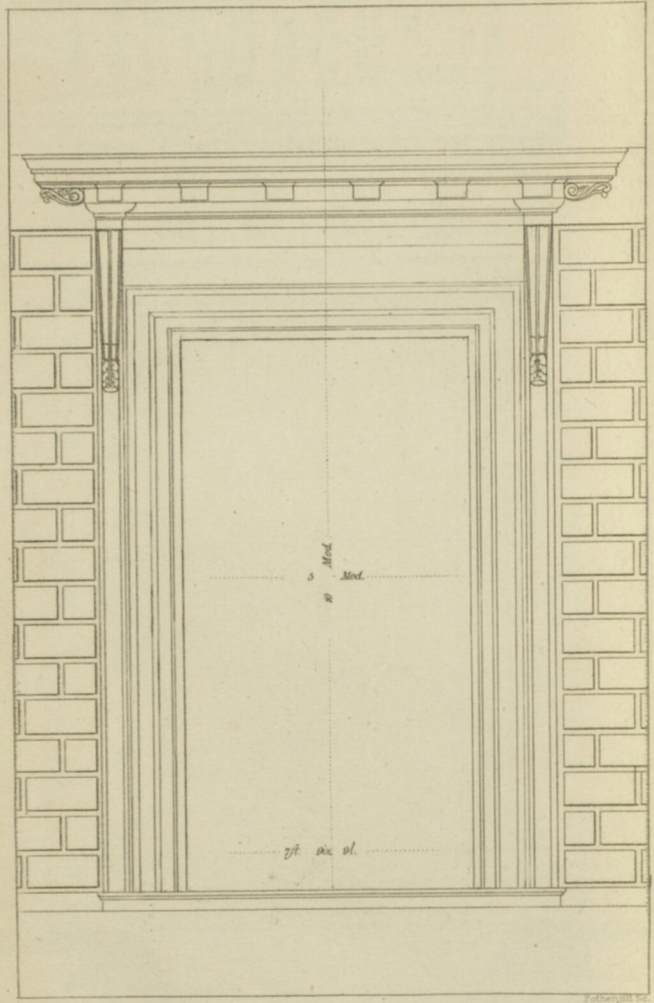


DORIC DOOR.


1 Mod. Part.
6
3
1
1 Mod. 1
1 Mod. 1
2 Mod.
2 Modules
11 Modules
7 Mod.
1 Mod. 3
1 Mod.
11 Modules. 8 Parts.


12 Parts
Modules

DOOR.

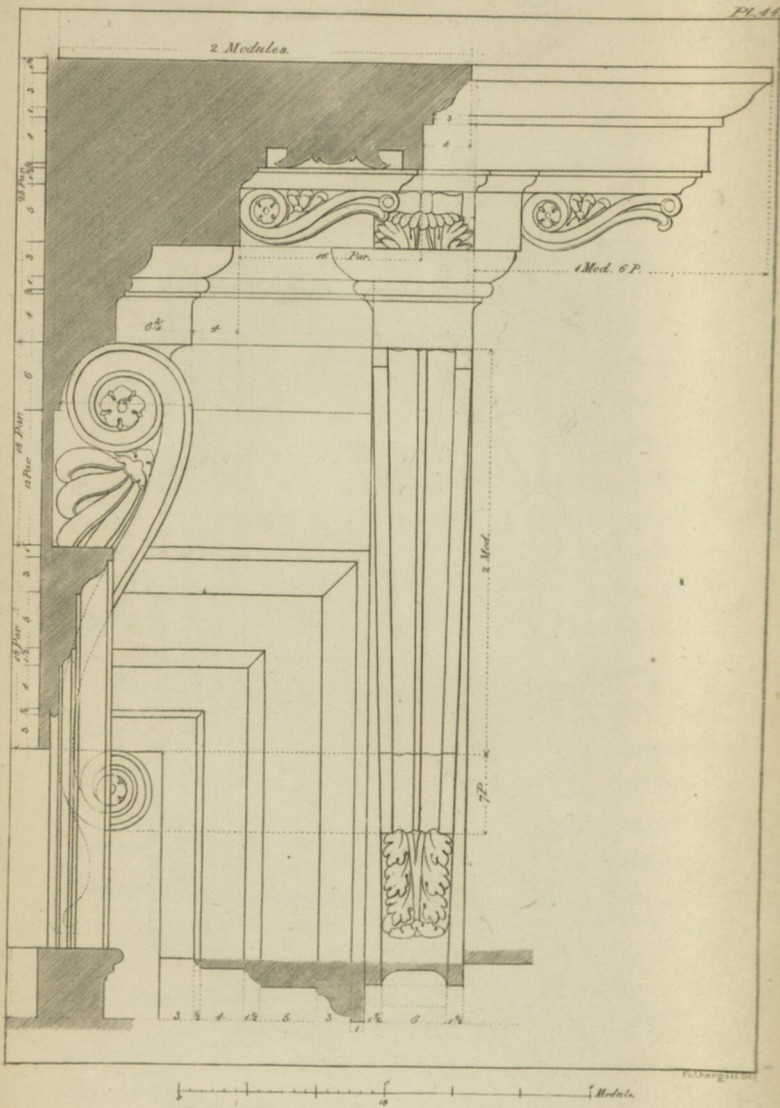


AT S. LORENZO IN DAMASO, AT ROME.

Fothergill Sc.

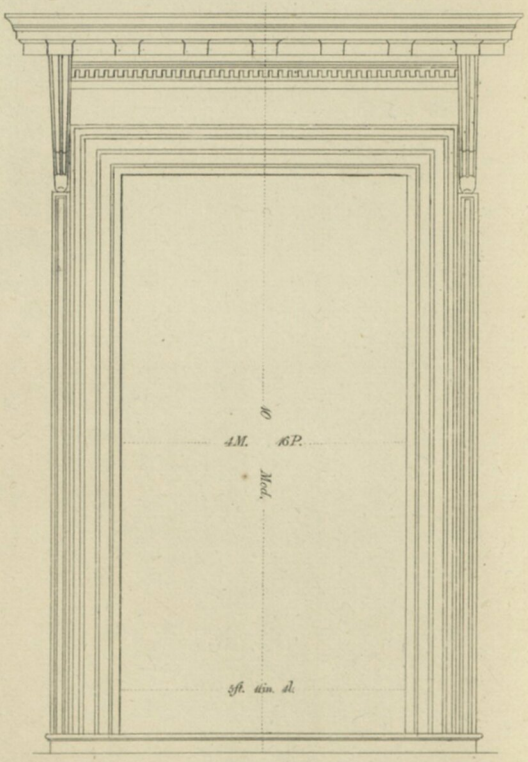
DETAILS OF A DOOR.

Pl. 44.



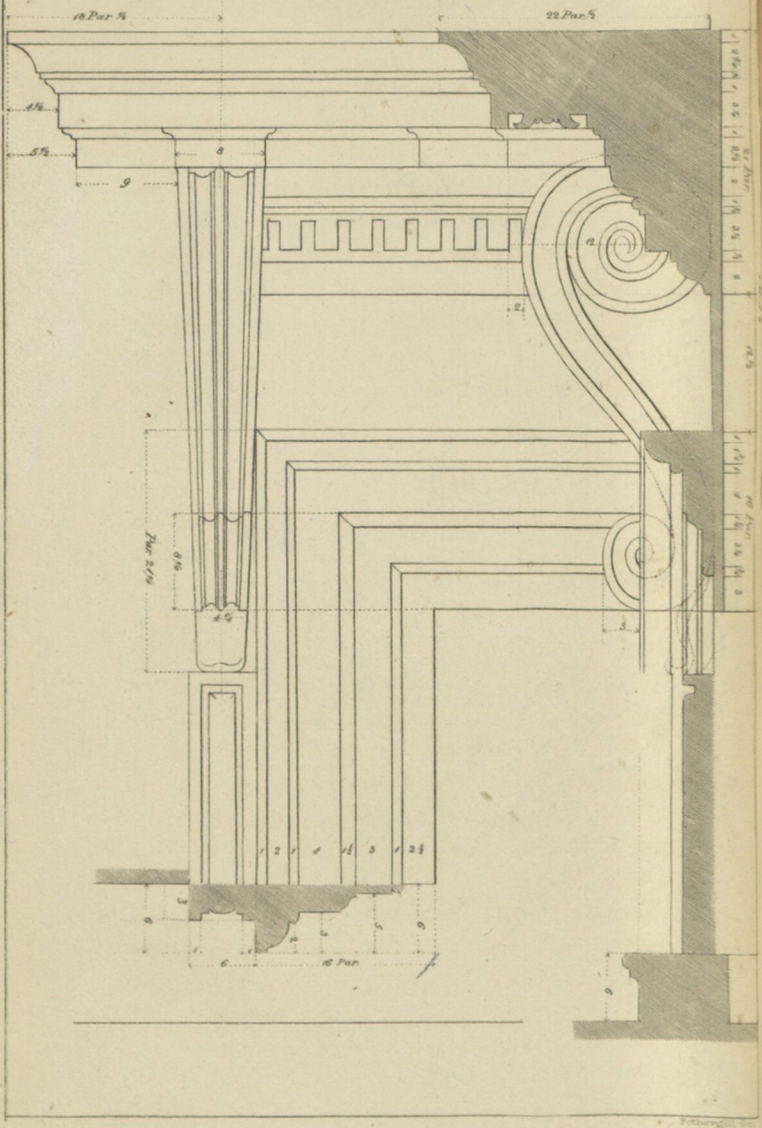
AT S. LORENZO IN DAMASO, AT ROME.

DOOR.



OF THE SALOON OF FARNESE PALACE AT ROME.

DETAILS OF A DOOR.



OF THE SALOON OF FARNESE PALACE.

OF WINDOWS.

OF all the parts of an edifice, the windows are those which require the most immediate relation with the interior distribution. An architect who disregards all but external decoration, and who neglects the relation which ought to exist between the exterior and interior of an edifice, can only be considered as a decorator. His first duty being to satisfy the laws of symmetry, the windows, which form in part a regular ordonnance at the exterior, should be equally conformable to what the interior of each particular apartment requires, so that the piers be of an equal proportion, and the spaces be symmetrical and corresponding in the saloons, apartments, cabinets, &c. Without this intelligence, the art of distribution, and also that of architecture, would return to that state of infancy and barbarism which characterizes the edifices erected from the fourth to the fifteenth century; during which period light was admitted into the different apartments through apertures, the distribution of which did not bear the least external relation to each other.

As symmetry at the present day holds the rank that it ought to possess in the ordonnance of buildings and edifices, it requires greater skill, and

distribution has become an art that requires the highest degree of judgment from those who wish to derive from the different parts of architecture all the resources of which the art is capable. It is not sufficient to observe that all the windows be placed perpendicularly over each other, but that there also exist a relation of proportion between them. It is for this reason that in buildings of any importance, blank or imitation windows are often employed, above, below, at the side, or directly opposite those which are known to be necessary, in order to preserve the laws of symmetry in the exterior of their façades. Vitruvius, Palladio, Scamozzi, and many other architects, have variously treated the proportions of windows. Their opinions must necessarily differ, according to the custom of the countries related to in their writings. Nothing effectively admits of greater variety, according to the climate, degree of temperature, duration of light, purity of the atmosphere, commercial occupations, mode of life, and the wants of society, than the apertures by which the light of the day is admitted into the interior of apartments.

In warm climates, windows are few in number, and small in their dimensions. According as we advance towards those countries where the sun has less power, and the winter season is of longer duration, it may be remarked that the windows

are employed so as to derive all the advantage possible from the sun and light which nature accords.

It must then be a great absurdity to suppose it possible to fix invariable rules for the proportion of windows, since in different situations nature is not submitted to any equality in the duration of the days, and temperature of the climate.

If windows are, of all the parts of edifices, those which are the most arbitrarily governed by the laws of necessity, it is no less certain, that notwithstanding these imperious reasons, they are also susceptible of receiving from the art the most harmonious relations, or of being subjected to the rules of proportion, on which the taste of the different nations accords, as on the beau ideal.

An edifice may be considered exteriorly as a composition of planes and apertures, independently of the wants and conveniences of the interior. There are some laws prescribed by solidity, and others that propriety, a perfect accord of the parts, and the pleasure caused by an harmonious correlativeness, render evident to all those who are exercised in the research of this description of beauty.

For example, solidity prescribes that the piers between windows be at least equal to the breadth of their aperture. In countries where it is customary to give to piers but one-half or one-third

of the breadth of the opening of the window, it must be evident, from the aperture exceeding the plane, that the construction must be weakened, and consequently the buildings must require more frequent repairs. In other countries, where it is customary to give to piers twice the width of the aperture of the windows, the houses present a massive and serious appearance, which is inconsistent with the character of similar constructions. For good effect in architecture, it is, however, better to fall into the last-mentioned excess than the former. The greatest evil in all constructions is a want of solidity, and the appearance alone of this defect is almost as great a fault as when it exists in reality.

The medium term for the proportion of windows consists in giving them twice the width of their aperture in height, as in plate 50, fig. 1, where the breadth of the antepagmenta, or architrave, is a fifth, and may be employed from this to a sixth of the width of the aperture; the height of the entablature, from the soffit of the architrave to the upper fillet of the cyma in the cornice, may be from one-third to one-fourth of the height of the aperture. The architrave and frieze should be equal in their height; and the cornice may be augmented one-fifth or one-sixth, but rarely one-fourth more than the height of the two other members, according as it may be judged necessary for

its character and effect. This rule has generally been adopted in the most celebrated edifices at Rome and Florence. These proportions, however, vary according to the nature of the stories. Windows of the ground story are generally reduced an eighth part less in their height than double their width, whilst those of the superior story receive an eighth, and sometimes two, more than the lower story; and the heights of the windows in the stories above gradually decrease according to the width of their apertures.

In the distribution of windows in the parts in advance, and those in retreat of a façade, it ought always to be observed, that one occupies the centre, or that they be of an uneven number, it being much more consistent for an aperture to be in the centre of the different divisions of all façades than a plane. Notwithstanding the examples in which this rule has been neglected, it ought in general to be regarded as inviolable, except in private dwellings, where the total is subordinated to the irregularity of the site, and the necessary wants and conveniences, which renders it impossible to follow the rules of an exact symmetry, under which circumstances it admits of modification.

The distribution of windows is not only confined to the relation of the horizontal position of their ordonnance in a story; there is another relation no less important, which is that which rules their

intervals and correspondence from one story to another. As an edifice is displeasing to the sight in which there are too great a number of apertures, or when the openings exceed the planes, so in like manner it is repugnant to solidity, and also to correct taste, to separate the stories only by a trivial intervening space. There ought to exist between the inferior and superior stories a space which indicates not only the thickness of the floor, but likewise a space necessary to make the cill of the window serve as an easy support. In this respect, the windows which have their cill as high as it is convenient in the interior of an edifice, give to the exterior a more happy distribution. This part of architecture, however, is subordinate to the manners of the nation in which it is employed. Windows amongst the ancients only served to admit light into their apartments, and not to render the aspect from these into the street their principal object, therefore the intervening height of the space between the head of one window to the cill of the window immediately above it was very considerable. Nothing can be more favourable to good effect in architecture, whether the wall of the houses be plain, or decorated with an ordonnance of columns or pilasters.

It is impossible to give precise rules for the distribution of windows in the interior of apartments. The only one to follow is symmetry. By this is

meant the most exact correspondence that it may be possible to observe between the intervals or piers which separate the windows, as also their uniform repetition, if they be placed so as to answer to each other, as is sometimes practised in such apartments that occupy the whole breadth of a building.

The principal difference in windows, particularly as relates to their form, consists in the diversity of their apertures; amongst which are those which serve as doors, and those that serve only as windows. The first are employed in the ground story, and have ordinarily the form of arcades, though sometimes they are employed with horizontal or straight heads.

Of the second description, or those which serve as windows only, there are three kinds; namely, those with semicircular heads, those that have their soffit or head straight, and those in which it forms the segment of a circle.

Semicircular windows are only employed with success in large masses of buildings, of which the edifices at Florence present us many fine examples, such as Pitti palace, &c. They are also often employed in churches that require very large apertures.

Windows with straight heads are those most generally used, being the least expensive in their construction. (See plate 50, fig. 1, and plates 47 and 48.)

Segmental windows are the least elegant in their form, being of an equivocal medium between those of the two former.

Semicircular-headed windows, when employed in the ground story, often serve also as doors. They are generally employed to admit light into vestibules, and at the same time to serve as their entrance, as also in large saloons, galleries, or any other extensive apartment. Those that are placed at the exterior of a façade, whose decoration requires the same ordonnance, ought to correspond in their base or plan with the arcades that ornament the other parts of the edifice. (See for the respective proportions of the arcades belonging to each of the orders, when employed without pedestals, plates 27, 28, 29, 30, and 31.) This description of windows may likewise be employed in the second story of an edifice, in which case the columns which form their decoration, if any be employed, should have pedestals, and the intervening spaces be occupied by balusters. (See arcades with columns and pedestals, plates 32, 33, 34, 35, and 36; their impost and archivolts, plate 37; and the balusters, plate 50, fig. 5 and 6.)

When the dimensions of the apartments do not require or admit of openings so large as those of the aperture of the arcades, these latter are feint, leaving such a proportion of aperture as is necessary for the admission of the light required in the

interior. If the form of the head of the window so situated be semicircular, it ought to have the same point of centre as the arch of the arcade; if it be straight, and employed with a cornice, the upper member of the cornice ought to be equal in height to that of the impost; if the aperture be plain, it ought likewise to extend to the height above-mentioned. To proportion these windows to their restricted width, it is necessary to raise them upon a plain continued pedestal, balustrade, or elevated string-course, the feint arcade being employed only when essential to the symmetry of the general ordonnance of the rest of the façade.

Mezzaninas are stories of low dimensions, employed in Italy, and generally placed between two loftier ones, sometimes between the ground and second story, and at others between the second and third story, which serve as small apartments for winter, for wardrobes, or as chambers for domestics. The part where these can be employed with the most propriety, which in other respects are generally to be condemned, is in the basement or ground story, when it is not intended to be occupied by the principal apartments, as also in different situations in commercial buildings and private habitations of less importance. Light is admitted into this description of rooms by means of small square windows, (See plate 50, fig. 3,) whose apertures are equal in width and height, and

divided into six parts, one of which determines the breadth of the architrave.

It is improbable that the form and proportion of the windows employed in each of the different ordonnances of architecture, according to which edifices are constructed, will ever be determined. It would be desirable, if it were possible, to fix, according to the character of each edifice, a corresponding expression for the doors and windows; but no part is more arbitrarily submitted to the judgment of the artist, or more governed by, or subjected to, necessity. When the style of the architecture of an edifice is required to be serious and grave, and the ordonnance to be rustic or Doric, whilst the interior conveniences require apertures of great dimensions for the admission of light, or otherwise in great number; such circumstances present a contradiction between the character of the ordonnance and that of the apertures, of which too many examples may be cited.

If an architect be not always at liberty to appropriate the form, proportion, and disposition of windows, to the general character of the ordonnance of an edifice, this is not the case with regard to their decoration. There are many degrees of character, from the naked window finishing with the face of the wall, to that where the architrave is employed, on the mouldings of which are sculptured the richest ornaments. Windows without

architraves ought never to be employed but in private houses, where architecture and art are no way connected, or in such extremely simple parts of edifices as is repugnant to all embellishment. It is in the character and degree of richness or simplicity of the architraves of windows that means may be found, which, from the variety of which they are susceptible, are capable of giving to edifices that particular expression that marks their destination.

The Doric order, in presenting a masculine character repugnant to all delicacy of decoration, does not necessarily demand a total exclusion of ornament. Harmony requires that all edifices which present this expression be accompanied, in the different parts which enter into the ordonnance, by profiles and ornaments exhibiting a similar character. Many examples present themselves in the Florentine architecture, that may be proposed as models for this description of windows.

The manner of decorating windows after the rustic style of ordonnance consists in surrounding them with bossages or rustics, of more or less projection, roughness, &c. according to the degree of strength or rusticity required to be expressed in the general mass. The edifices of Tuscany present imposing and almost terrifying models of this style, which can rarely be judi-

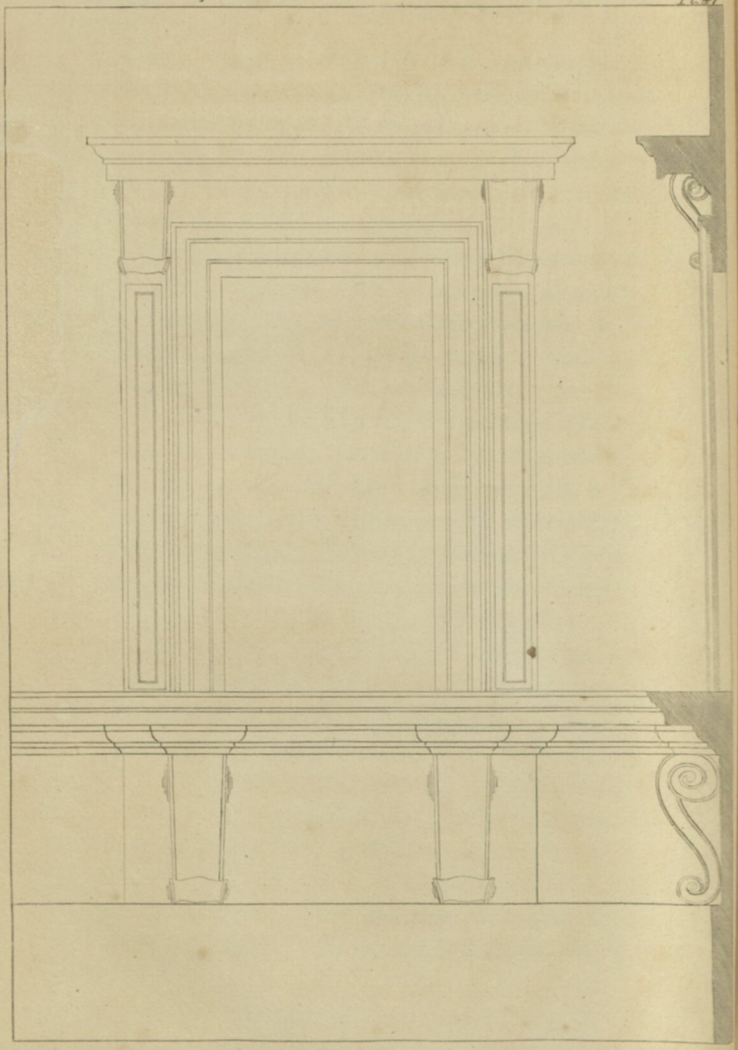
ciously employed, and only in extensive edifices; on which occasions, when an ordonnance of columns is employed, the architraves of the windows ought to be plain and unbroken, and to present a character of strength consistent with the style adopted.

The Ionic architraves ought to exhibit more delicacy than richness, and to follow a progression of form, as also of richness. Windows of the Ionic ordonnance should present an entablature without pediment. (See plate 47.)

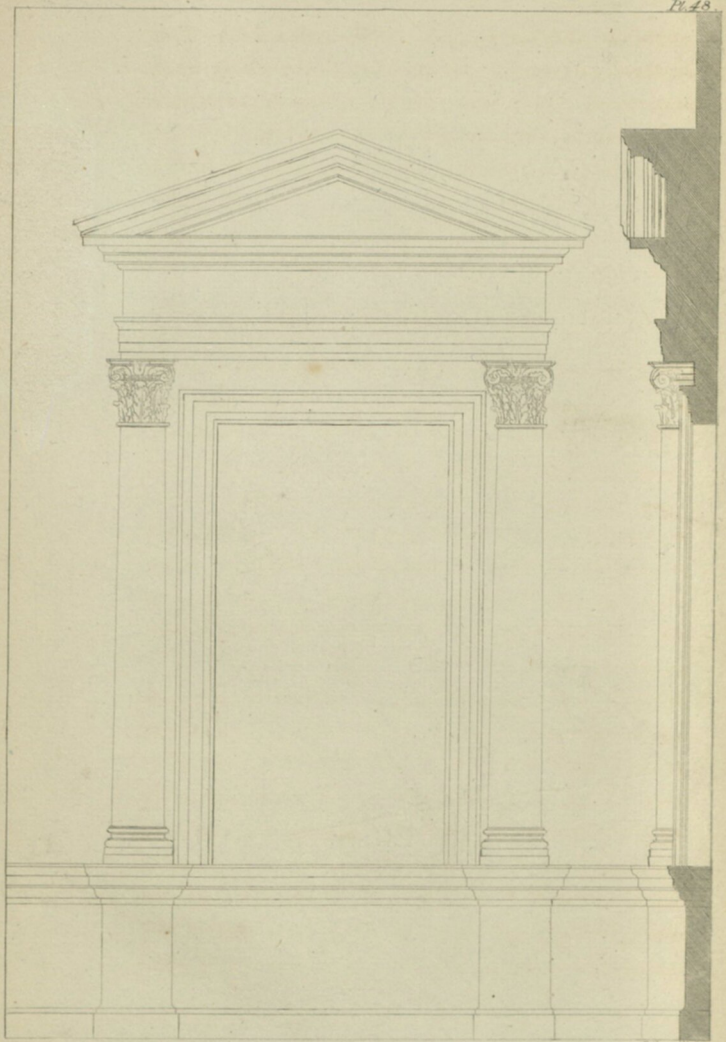
All the elegance and richness of form, proportion, and sculpture, are reserved for the windows of the Corinthian ordonnance, as in plate 48, which presents an example decorated with an entablature and pediment supported by columns having composed Corinthian capitals. The pediment may be traced as in plate 50, fig. 4, by taking for a centre the point C, which is half the distance between each extremity of the cyma, M N, intersecting the vertical line below at F, with a radius of C M; afterwards placing the point of the compasses at F, and extending them to M, describe the arc M N, whose intersection at D will determine its height; or according to the method given by Vitruvius, by dividing the whole length between the two extremities of the pediment into nine equal parts, and taking one of these divisions for the

WINDOW OF THE GROUND STORY OF FARNESE PALACE
IN THE FAÇADE FRONTING THE PLACE.

PL 47



0 1 2 3 4 5 6 7 8 9 10 Feet.



Fothergill Sc.

0 1 2 3 4 5 6 7 8 9 10 Feet

OF THE SECOND STORY OF FARNESE PALACE, IN THE FAÇADE FRONTING THE PLACE.

height of the tympanum. (See plate 26.) For numerous examples of the form, proportion, and decoration of windows, see the different elevations and sections, commencing with plate 56.

OF BALUSTERS.

THERE are no examples of the employment of balusters amongst the ancients. Their origin can only be assigned to the different fences or parapets executed in wood, and employed in situations not requiring other or more expensive materials. Modern architecture has not only adopted and imitated these forms in stone and marble, but has likewise given to each different proportions, according to those of the orders which they are intended to accompany.

The earliest productions of balusters are those executed at Florence, and a few other cities in Italy, which take their date from the first centuries of the restoration of the arts, representing small columns; this method, though puerile, is perhaps better than that which custom appears to have confirmed. Modern balusters present no other reason for their peculiar forms than the caprice or whim of a Turner, by whom they seem

to have been determined. It is difficult to conceive what can have caused the employment of balusters to such a considerable extent in modern architecture, since they are inconsistent with correct taste, from their insignificant situations and capricious forms; and also from their abusive employment without necessity or reason, which it is to be hoped will ultimately tend to produce their suppression. Nevertheless, in conformity with the general plan, their proportions shall be given according to those masters who have best treated on this subject.

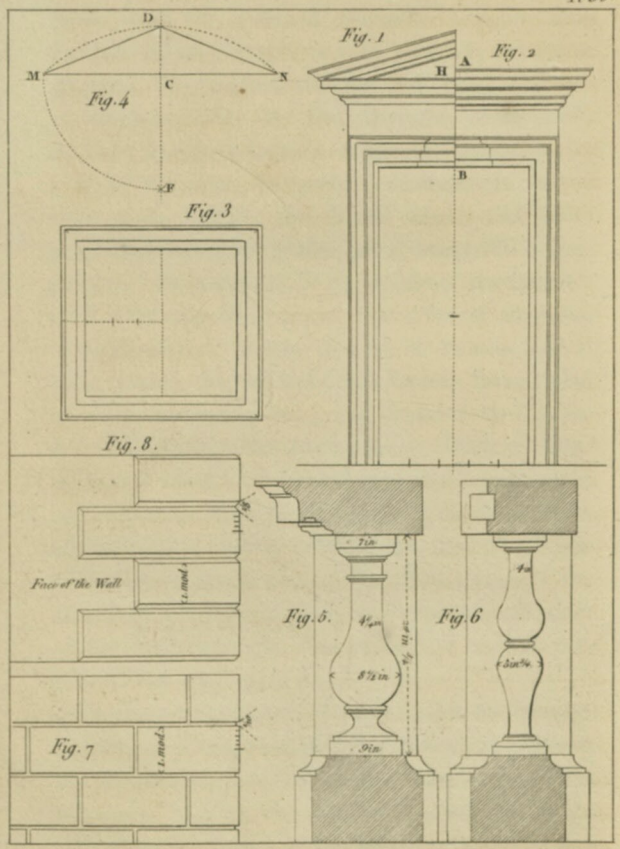
Balusters are ordinarily a species of column, occupying the place of the die in a continued pedestal, composed of three principal parts, a capital, shaft, and base, which, when placed upon a socle, and surmounted with a cornice, forms what is termed a balustrade. Balusters, as also balustrades, should express the character of the edifice in which they are employed, conformably to those of each of the orders. They are best situated when placed between the sides of the aperture of arcades, above the ground story, or between the pedestals of a range of columns forming a gallery; in balconies, staircases of important edifices, enclosures for altars, thrones, state beds, &c.; and not upon the entablature of buildings or edifices, except when their roof is constructed in the form of a terrace.

Balusters should be employed of an even number, never admitting the half of a baluster at the extremities of each range; and the distance which separates them between their greatest diameter should be equal to one-half of that diameter, so that the aperture may be equal to the plane. There are five species of balustrades: the socle of the Tuscan is plain, and the cornice is an even face, surmounted with a fillet; its baluster is massive in its proportions, and has few mouldings. The Doric is lighter and more ornamented; and the other three species present a similar gradation. The proportions and mouldings of the cornice and socle are governed by those of the pedestals of the different orders.

To find the general heights of balusters, divide the die of the pedestal, which will be the height of the baluster, into five parts, one of which will give that of its base, dividing the remaining four parts into five, one of which will determine that of the capital. Again divide the space between the capital and base into five other parts, three of which will give the height of the neck, and two that of the swell. The plinth should be one-third of the height of the base, and the abacus one-third of that of the capital. These are the general proportions common to the five species of balusters; the number of their mouldings, their expression, the outline or swell of their shafts, the elegance or

strength of their forms, being governed by the order to which they belong. The Tuscan baluster is of the greatest diameter, has the least number of mouldings, and is generally square in its plan. Its height is divided into five parts, two of which are given for the diameter of its swell. As the Corinthian baluster ought to present a degree of elegance, its greater diameter is but a third of its height; the Doric, Ionic, and Composite balusters, have the same comparative proportion. For example, if the height of the baluster be divided into sixty parts, the greatest diameter or swell of the Tuscan should be twenty-four of these parts; that of the Doric twenty-three; that of the Ionic twenty-two; and those of the Corinthian and Composite twenty-one. Each of these diameters should be divided into two equal parts, one of which will give the diameter of the collarin of the capital, scotia of the base, and the lesser diameter, or upper part of the shaft; that of the plinth of the base is equal to the greater diameter of the shaft, and the abacus of the capital one-fifth or one-sixth part less.

In the employment of balustrades to principal staircases, care should be taken always to preserve the horizontal position of the mouldings of the balusters, making the inclination, caused by the stairs, in the height of the plinth of the base and the abacus of the capital. As to the number of


D
M
C
N
Fig. 4
F
Fig. 1
A
H
Fig. 2
B
Fig. 3
Fig. 8.
Face of the Wall
1 mod.
Fig. 7
1 mod.
Fig. 5.
7in.
4½in.
8½ in.
9in.
Fig. 6
4in.
3in¾.

balusters that should be employed between any two solids or planes, namely, between pedestals and sides of apertures, it should never exceed twelve, nor be less than four. The figures 5 and 6, plate 50, may serve in some degree to illustrate the general expression of the two extremes in balusters, that of strength and elegance. For examples of their employment and form, see the different elevations and sections which follow.

OF NICHES.

THE employment of niches, when considered as to their primitive form, is of the highest antiquity; witness those cut in the rocks in the excavations at Nubia, Eysenboule, Gerche-Assan, &c.; but their employment as an object in architectural decoration is much less ancient. The Greeks gave the first proportion to niches, according to their situation, at the exterior or interior of edifices. They were the people who introduced statues as forming an essential part in characterizing the different edifices, and the employment of niches in architectural decoration very naturally followed. The proportions of their statues determined

those of the niches, which were however subjected to the order and ornaments of the edifices in which they were employed. There can be few examples of niches cited amongst the existing remains of Greece. In their temples the statues were colossal, and placed at the extremity of the cella, being insulated, as at the temple of Jupiter Olympus, and that of Minerva, at Athens. Amongst the examples of niches presented in different edifices, there are some which are square, as at the choragic monument of Thrasyllus, and likewise at the monument of Philopapus, where there are one circular and two quadrangular niches, which are still ornamented with statues. But if we had not these references, as proofs of the employment of niches in the antique edifices, there could be nothing inferred against their extensive employment from the number of those discovered amongst the existing remains, erected at a certain epoch, being small, as all the edifices of Greece, such as the Gymnasii, Agorai, Stadia, &c. as also all the magnificent productions belonging to private individuals, have perished. Those examples presented to us in the antique edifices, erected in the Roman empire in the most flourishing centuries of the art, and for the greater part by Grecian artists, will serve us as proofs of the manner in which niches were employed by the ancients, of which there are two species. The first serve for the placing of

statues; the second are destined to different uses, as the *exedræ*, or hollow spaces of greater or less dimension, of a square or semicircular form, in walls of a considerable extent. The first are situated in temples, saloons, and basilicas, between the intercolumniations of porticoes, and in plain walls, being generally about seven feet in height, so as to contain a statue the size of life, as those at the temple of Mars the Avenger. This is the most suitable dimension, since it serves as a scale of comparison to judge of the exact proportions of the edifice. Niches of this dimension were often employed in the interior of temples, when constructed of brick, as at the temple of the forum of Antoninus, and that of Venus, at Rome, together with a great number of other constructions of brick, where this description of niche has been adopted, both at Rome in the thermæ, and at Tivoli, in the private buildings of the villa of Adriana. At Rome, the thermæ, colonnades, and the basilica, as also the public and private edifices, were decorated with statues which were generally the size of life, and which tended to give an appearance of still greater extent to their immense edifices, as the thermæ, theatres, amphitheatres, circuses, &c. Of this first species of niche there were both round and square; when they were square in their plan, they were square also in their elevation; as likewise when they presented a semi-

circular plan, their elevation terminated in the same manner. Sometimes they were without ornaments, at others decorated with architraves, as at the arch of Janus: they were also employed with columns and pediments, as at the pantheon and thermæ, and also at a temple at Nismes, generally named that of Diana. The interior of this edifice has its two sides decorated with six Corinthian columns engaged in the walls. Each intercolumniation is occupied by a niche, placed upon a stylobate, and ornamented with an architrave, formed by two pilasters that support an entablature with a pediment, presenting one of the most beautiful models of its kind with which antiquity has furnished us. (See plate 49.) At other times, when employed with columns which were situated at too great a height to admit of pedestals, the columns were placed upon consoles, as at the thermæ of Dioclesian and façade of the temple of Peace.

The second species of niche are of large dimensions, having the pavement for their base. They are employed at the exterior of edifices, to contain groups of figures, or colossal statues, as those under the portico of the pantheon at Rome. Others of this description, though of still greater dimensions, were sometimes placed at the extremity, in the interior of temples, for the reception of colossal figures, as at the cella of the temple

of Venus at Rome; and at other times in the basilicas, to contain the seats of the tribunal, as at the temple of Peace, which Constantine employed as a basilisa, and in the basilica at Pompeii. In this instance it is named the chalcidicum. Those presented in the saloons of the thermæ were surrounded by seats, for ease and conversation; examples of which may be found in the different thermæ, and in several saloons at the villa of Adriana. Lastly, niches of greater dimensions than the preceding were constructed in the walls which served as inclosures for the thermæ, answering as abutments: some were semicircular, and others square in their plan, which were often employed alternately. When their dimension was very considerable, they were left open at the top, and contained many rows of seats placed above each other, serving as amphitheatres for the delivery of public discourses, or the exhibition of particular games; examples of which may be seen at the thermæ Caracalla and Dioclesian: this kind of niche is termed exedra. They were also employed in Greece, in the inclosures surrounding the temples, as at the temple of Jupiter Olympus, repaired by Adrian, which presents niches of this description, some of which are square and others semicircular in their plan, and which are placed alternately. Their front was decorated with columns, and their summit presented a covering of wood,

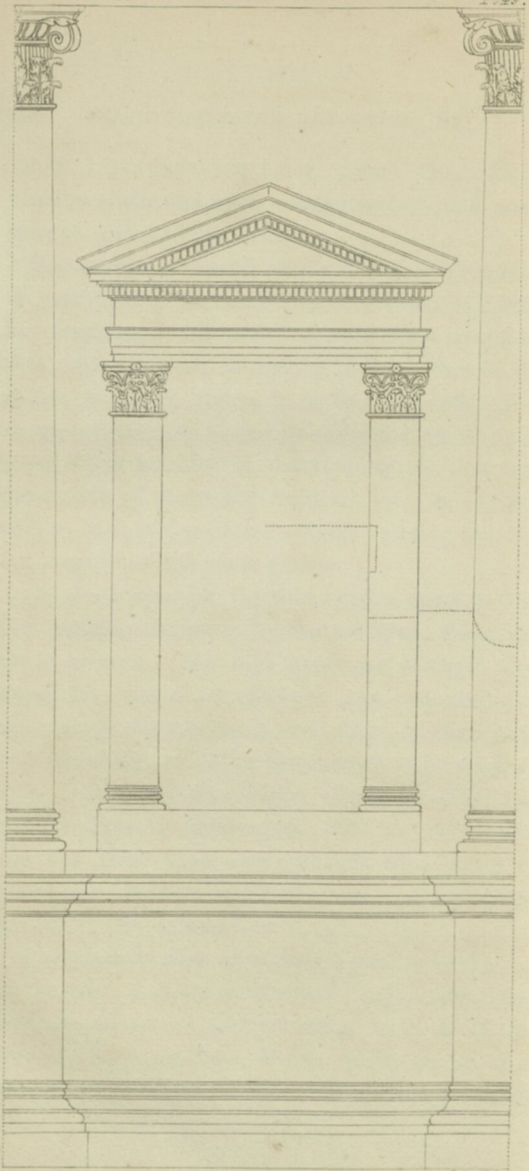
(their dimensions not being great) the soffit of which was divided into compartments, and ornamented with paintings.

The antique examples above cited furnish models of each of the different kinds of niches; and what has been said will doubtless show what character they ought to bear, according to the nature of the edifice in which they are to be employed. This character ought to be governed by the same judgment which presides in determining the form and decoration of doors and windows, not as regards utility, but as decorative objects entering into the ordonnance of the same edifice.

Of those amongst the first species mentioned in this article, employed by the moderns, there are three classes. The first expresses strength and simplicity, the third elegance and richness, and the second the medium: their form, in their plan and elevation, is either quadrangular or semicircular. The first is without any decoration; the second class is ornamented with an archivolt; and the third class comprehends that which is ornamented with an entablature and pediment supported by two columns.

This classification of niches is similar to that of all the other parts of architecture, expressing three distinct characters corr sponding to each of the orders. Each of these niches ought to be of a proportion consistent with the ordonnance to which

NICHE



IN THE INTERIOR OF A TEMPLE AT NISMES.

they relate, which is alone determined by judgment. It has in vain been attempted by many authors to determine the invariable proportion of niches, as also the other parts of architecture, without success. The general rule given for the proportion of niches is twice and a half their width in height; the particular rule is, to divide the width of each of the three classes of niches into twelve parts, giving twenty-eight of these divisions in height to the first, thirty to the second, and thirty-one to the third. This determination of the proportions of niches, like those of the orders and the other parts of an ordonnance, are only a species of medium terms, established to serve as approximate measures to the combinations of the artist. For examples of their employment, see the different plates of plans, elevations, and sections, which follow.

OF CROWNING ENTABLATURES.

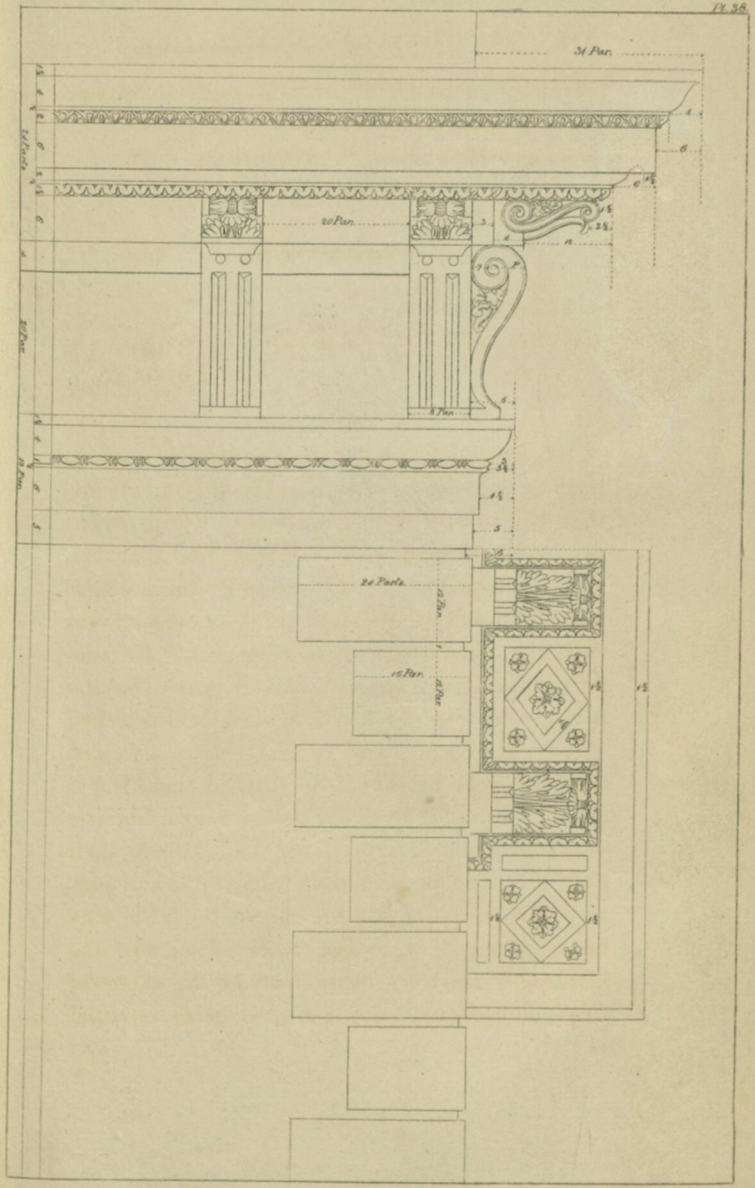
THE expression of style, taste, and character, suitable to each edifice is perfected by, and in a great measure depends upon, the entablature. This expression may be given in two manners,

character in which ought necessarily to vary according to the uses for which it is intended, are more suitable to artizans than artists.

OF THE FORM AND PROPORTION OF THE INTERIORS OF BUILDINGS AND EDIFICES.

THE general forms and proportions assigned by modern authors to the different apartments are, that the forms of spacious cabinets, dining, drawing, and ball-rooms be rectangular, and that their length be equal to the diagonal of a square formed on their breadth; whilst those of saloons may be square, circular, elliptical, or octagonal. The proportions of great galleries and extensive libraries may extend from one-fourth to one-seventh of their breadth in length. The general height of apartments is given by taking one-half of their length and breadth; for those of galleries and libraries of considerable length, once and a half their breadth. The proportions of staircases and passages or corridors (the breadth of the latter may be from one-third to one-fourth of that of the principal rooms) are determined by the extent of the buildings and apartments, it being essential

CROWNING ENTABLATURE.



in architecture always to observe a direct relation between the parts and the total.

Vitruvius gives three kinds of vestibules, according to the different proportions of their length to their breadth. The first consists in dividing the length of the vestibule into five parts, three of which are given for the breadth; the second into three parts, giving two for the breadth; and the third in taking the diagonal of a square for its length, whose side is equal to the breadth of the vestibule. Their height is less by a fourth part than their length.

The pteromata (a range of columns at each side of the vestibule, leaving a passage between them and the wall,) situated on the right and left, should have in breadth, if the length of the vestibule be from thirty to forty feet, each a sixth part of its length; if it be from forty to fifty feet, a seventh part; if from fifty to sixty feet, an eighth part; if from sixty to eighty, a ninth part; and lastly, if from eighty to one hundred feet, each one-tenth part of its length for their breadth. The architrave placed upon the columns forming these passages should be of such an elevation as to make the height equal to the breadth. The intercolumniations should not be less than three diameters, nor more than four. If the Doric order be employed, they are governed by triglyphs.

The tablinum, or cabinet, should be, if the

width of the vestibule be twenty feet, of two-thirds of that dimension; if it be from thirty to forty, one half; and if from forty to fifty feet, the proportion of the cabinet should be two-fifths of the length of the vestibule. The height of the cabinet should be an eighth part more than its width. The principal entrance of the least vestibules should be two-thirds of the width of the cabinet, and that of the large vestibules one-half of the same width.

The triclinia, or dining-room, should have double its breadth in length, and its height be equal to half of its length and breadth taken together; which proportion may serve as a general rule for all rooms whose length exceeds their breadth, except when of a great length, in which case their heights are determined by taking once and a half their breadth. If the oeci, or saloon, and the exedra, or drawing-room, be of a square form, half of their width should be taken for their height. The pinacotheca, or picture-room, gallery, or cabinet, like the drawing-room, should be spacious. The grand Corinthian and tetrastyle, or Egyptian apartments, ought to be of similar proportions to those prescribed for dining-rooms; but their dimensions should be great, on account of the columns employed.

The Corinthian and Egyptian apartments differ from each other by the Corinthian having but one

order of columns placed upon a pedestal, or otherwise upon the pavement, and supporting their architrave and cornice of wood or stucco, above which is the ceiling, forming an arch, having some degree of surbasement. But the Egyptian apartments have an architrave upon their columns, and above the architrave is a floor, which extends from the columns to the wall.

This floor is constructed in such a manner as to form an open terrace around the whole. Above the architrave, and perpendicularly over these columns, others are placed, whose height is less by a fourth part than those beneath them. There is an architrave, with other ornaments, upon the upper range of columns; and the roof has a straight ceiling. Between the upper range of columns are windows, which give to it the appearance of a basilica, and this constitutes the difference between the Egyptian and the Corinthian apartments.

Palladio states, that the finest forms for apartments and rooms are seven in number, namely, the round, which are the most rare; the square; those whose length is equal to the diagonal of the square formed upon their breadth; those of a square and a third; a square and a half; a square and two-thirds; and lastly, of two squares: and that the finest proportion for the height of these different apartments, when they have flat ceilings, is in

giving their breadth for their height. But if those which are square in their plan be terminated by semicircular or vaulted ceilings, they should have one-third more than their breadth to the key of the arch; and the height of those whose length is greater than their breadth is given by adding the length to the breadth, and taking the half.

Scamozzi observes, that the ancients made their apartments square, or otherwise twice their breadth in length, and that their general height at the least was their breadth, or, at the most, the half of the length and breadth together. The following are the five different proportions which he proposes for apartments. The first, says he, are square; the second have once and a quarter their breadth in length; the third, once and a half; the fourth, once and three quarters; and the fifth, twice their breadth in length. For the height of the first, he prescribes their breadth; to the second, an eighth more than their breadth; to the third, a fourth; to the fourth, three-eighths more than their breadth; and to the fifth, once and a half their breadth: and he further adds, that the first, or ground story, ought to have the greatest elevation, which agrees with the opinion of Palladio, who says, that each story ought to have a sixth less in height than those below it.

OF DISTRIBUTION.

ONE of the most important parts of architecture, the aim of which is to render its various productions healthful, commodious, and agreeable, consists in judicious distribution. This branch of the art, as practised by the ancients, is that of all others of which we have the least knowledge. Private habitations are not constructions of a nature capable of surviving the overthrow and revolutions which destroy cities. Was it not for the discoveries made of the cities buried by the eruptions of Vesuvius, our knowledge would be confined to the obscure and problematic descriptions given by a few writers of antiquity. The small number, and state of preservation of those houses which have been discovered, have, however, tended to throw but little light on the distribution of interiors. Nothing is more subordinate to domestic customs and habits. What is remarked in the plans of these houses is, a very simple and almost uniform distribution. At the villa of Pompeii, however, the studied and skilful application of ornaments, and the judicious distribution of dependancies and interior conveniencies, make it presumable that this part of comfort and pleasure must have been carried to a great extent, both in

town and country houses belonging to wealthy individuals.

Modern artists accord in their opinion on the probability of this conjecture, from an examination made of the plans of the villa Adriana, at Tivoli. The apartments are distributed with the greatest art; the baths, and all the other conveniencies, are arranged in the most diligent and able manner; those rooms which were of a good dimension were lighted in a manner very appropriate to the climate, and with great art accommodated to the different hours of the day during which they were employed. These shapeless ruins prove to us that the art of distribution, and the luxury of conveniencies, were carried to the greatest extent in the Roman empire.

Vitruvius, treating on this subject, c. 7, b. 6, makes the following observations. The winter triclinium, or dining room, and the bath, should be situated opposite to the winter's declining sun, because its light is there useful; besides, the western sun shining thereon, produces heat, and makes the aspect warm and pleasant in the evening. Bed-chambers and libraries should face the east, for in these the morning light is required; it is also necessary in order that the books in libraries may not decay, for in those that are situated to the south and west they will be damaged by the damps and worms, which the humid winds generate and nourish. The rooms destined to be em-

ployed during spring and autumn should face the east, for the windows being then turned from the sun, proceeding westward, render those apartments temperate at the time they are generally employed. The summer dining-room should be situated towards the north, because this aspect is not, like the others, rendered hot at the summer solstice; for being turned from the course of the sun, it remains always cool, and when used, is salubrious and pleasant. The same aspect is also the most proper for the pinacotheca, or picture-rooms or galleries, on account of the equality of the light.

Distribution is intimately connected with the climate, mode of life, social habits, and the precedents of ostentation and vanity; and if these differ in each age and nation, it is difficult to conceive how this part of architecture can be submitted to rule, or any positive examples be proposed. One point alone may be agreed upon, which is conveniency, as this doubtless constitutes the base of distribution. Nevertheless, even conveniency is a local thing, dependent on habit, which differing every where, must necessarily produce different results.

A summary of the different opinions of those who have treated on this subject, more particularly as regards residences, is contained in the following general remarks.

A building ought to present itself in an advantageous manner, and have a good entrance.

The best situation for the body of the house is between (if it is intended that there should be each of these) the court and garden.

The offices and stables should be placed in such a manner that the apartments may not be incommoded, which may be avoided by placing them so as to range with each side of the court. One of these sides, that on which the offices are placed, should be connected by a passage or vestibule that leads to the dining-room, in order that the service of the table may be conveniently attended to.

Irregularity in the forms of the different rooms or apartments should be avoided: it ought only to be permitted when its application to some detailed part may procure a greater space or more desirable situation to any of the principal apartments.

When, in a spacious mansion, it is intended to form an extensive range of apartments, it is necessary to avoid placing any rooms destined for the use of servants in the same range.

In interior as in exterior distribution, symmetry ought generally to be observed, except in some cases of interior distribution, on which occasions the necessary relation of the opposite sides should be judiciously arranged.

It is an indispensable rule, that the interior distribution accord with the exterior decoration.

In concluding this subject, which, as before remarked, forms one of the most important parts of architecture, it may not be superfluous to offer some further observations. If a vestibule, gallery, or any other part, present itself at the entrance of a house or edifice of more than one story, the staircase ought to be conspicuously situated, and the distribution of each story should be so judiciously conceived and arranged, that the landing may afford the greatest facility between each principal or private room or apartment. But as this subject will not admit of a detailed indication, it is necessary, before forming plans of the distribution of either public or private edifices or buildings, to ascertain the particulars of all that is required, the general and detailed relations of the locality, and the situation, which is no less essential, so as to profit by the different prospects that may present themselves from the interior, as also for the aspect of the exterior; for a judicious composition of a plan cannot be expected to result from an inaccurate knowledge of the desired conveniencies, or an inadequate study of the advantages or disadvantages of the site. To effect this desirable end, no design should be attempted without previously forming a correct and detailed memorandum of all the exigencies.

OF CUPOLAS OR DOMES.

BEFORE proceeding to pass any observations on the nature and employment of the cupola, it will perhaps be necessary to give a history of the form and application to which the arch was subjected amongst the ancients, and afterwards that which it presents in the middle ages; and lastly, the differences it underwent, in its form and application, on its introduction into modern architecture.

The generality of writers who have visited Egypt agree as to their being no indication of a real arch amongst the monuments of that country. There are, however, many examples that present a kind of essay or rude attempt at this manner of construction. In the pyramids are found a species of raised ceilings, which terminate at a point by means of stones, which are laid flat, and projecting the one over and beyond the other. The uppermost, or centre stone, instead of forming a key, that is to say, being drest conically, is laid flat upon the others, without forming any stay whatever to the superior part of the masonry. All the different monuments of the same period, which present this form in their construction, offer the same arrangements. Pliny, in speaking of the

repairs which the subterrains of the labyrinth had undergone, employs the word fornex, which is applicable to straight ceilings. The remains of a bridge over a canal leading to Coptos exhibits flat stones of considerable length, extended from one pier to the other. Those discovered by Pocock are of a posterior date to the arrival of the Greeks in that country, and the arch spoken of by Lucas was erected at the decline of the Roman empire.

As the climate of Egypt accorded well with the early custom of forming excavations, and subterraneous constructions, so likewise it was very propitious to those which were afterwards erected in imitation of the same type and style. The employment of flat coverings is also authorized by the absence of rain, substituted by the periodical overflow of the Nile. In constructing the coverings of galleries, slabs of stone were used, extending in one piece from the columns to the wall. The temples do not appear to have been composed of interiors requiring immense coverings; and indeed, independent of the practices which were already established, the scarcity of wood alone in this country must have prevented its extensive employment in their edifices.

The inclined carpentry, on the contrary, with which the constructions of Greece were surmounted, gave rise to the pediment; and in like manner the arched covering was suggested by the roof.

Hence we may account for their absence in Egypt. In the last-mentioned country, the soffits of the ceilings present only a smooth surface, without indication, as in Greece, of the framing of the carpentry producing compartments. This indication of the employment of wood particularly characterises this part of the Grecian architecture. Its absence sufficiently proves that of the material in the model of the Egyptian architecture.

Carpentry affords simple and economical means of uniting under one covering the most extensive interiors, and this being once established by necessity, the natural progress of ideas must have endeavoured to replace it, by constructions more solid and durable.

That the Greeks have constructed what we designate rotundas is beyond a doubt, as also that they have employed carpentry to cover similar interiors. The odeon furnishes us with an example. Pausanias describes a circular edifice named Philippeum, erected in honour of Philip, king of Macedonia, the covering of which was likewise of wood, having at its summit a species of ornament of bronze, to which the ends of the rafters were secured. The same writer makes mention of a circular monument at Epidaurus, all of which was constructed of white marble. Also of another of the same form and materials, but of a more ancient date, at Orchomenos, covered by an hemispherical

arch, or what is termed a cupola, of stone, having its key of the same material. Thus, vaulted and hemispherical arches were constructed in Greece, not only of wood, but likewise of stone, from an early period.

This manner of construction was afterwards adopted at Rome, and, as forming a part in the thermæ, palaces, &c. received new modifications, which gave rise to arches presenting other forms than those which had hitherto been employed. Such were the surbased arch (testudo,) the hemispherical arch, applied to elliptical and octagonal plans (hemisphærium,) and the arch with lunettes, or groins (camera lunelata.) The employment of this last species became indispensable in the construction of immense interiors requiring large openings for the admission of light; the windows naturally being inscribed within the space formed by the intersecting arches. There is no example of this description of arch on an extensive scale anterior to the construction of what is commonly, though doubtfully, named the temple of Peace. The same species was likewise employed in the thermæ. Those bearing the name of Dioclesian are the best preserved. The great saloon in the centre of this thermæ exists in its entire state, and is used at the present time as a church. If this construction be minutely examined, the germ and principle of the pointed, or what is more generally termed the

Gothic arch, to which such trivial and unsuitable origins have been assigned, may be discovered. This saloon is covered by a groined arch or vault, the springing points of which are supported by eight granite columns, which decorate its sides. The whole of this vaulted covering is composed of three large compartments, formed by a longitudinal and transversal, or intersecting arches.

This example, which has been selected in preference to any other, on account of its being more generally known, may serve to show, that necessity alone, which requires that extensive interiors be constructed after this solid manner, suggested, a very considerable period before the time of Gothic architects, the system of intersecting arches. By comparing the naves of Gothic churches with the above-mentioned example, no other difference will be found than what results from the nature and employment of the materials. The springing points of the arches of the thermæ rise from columns, in the same manner as Gothic arches rest upon pillars.

We shall now resume our researches of the alterations that the forms and employment of the hemispherical arch of the ancients underwent, in its application in modern architecture, from the restoration of the arts to the present time.

The general form of the antique temples is that of a parallelogram. But a considerable number have

been erected that were circular in their plan. This last-mentioned form appears more particularly to have been observed in temples dedicated to certain divinities, such as Vesta, Sybilla, Bacchus, &c. The most celebrated, and also the best preserved, of the antique rotundas, is that at Rome, which bears the name of the pantheon, supposed to have been dedicated to all the deities. The ancients executed no edifices, either of a curvilineal, or any other form, presenting the particular character which distinguishes the modern cupolas or domes from the antique rotundas. The worship of the ancients consisted of sacrifices, followed by torrefactions, libations, and many other customs, which from the smoke, odour, and cleansings, that attended them, were rendered insupportable in the interior of a confined edifice, and which alone could be practised in the open air. Thus a temple amongst the ancients was in reality but a species of sanctuary, generally of a limited extent, and in some cases without covering. The sacrifices were made at the front of the temple, in an inclosure which was often of a great extent, and by which it was surrounded. It is even doubtful whether the rotundas, or other edifices of this kind, have been temples. The pantheon is suspected, and not without great probability, as having formed part of the thermæ of Agrippa, being the only one of the saloons that has escaped

destruction, amongst all those whose remains are approximately situated, the great total of whose plan is known to the generality of artists.

The difference of the mode of worship introduced by the Christian religion, required interiors of a sufficient extent to contain the number of those who attended the ceremonies; and as instruction formed a principal portion of that worship, it became necessary that the limits of their extent should be such as to admit of the minister being heard by the individuals present. Amongst all the ancient edifices, none presented a form so well adapted for that which was required as the basilicas, whose spacious interiors were proportionate to the nature of the ceremonies. The disposition of their plans being of the form of the letter T was alone sufficient, independently of their analogy with the sign of Christianity, to cause the form of a cross to be adopted in the plans of the first churches afterwards erected.

The desire which they manifested to retrace in this form the sign which was the principal object of their veneration, caused them to depart from time to time from the simplicity of the basilica, by the addition of a transversal nave crossing the principal nave at right angles. This point of the intersection of the two naves, presenting itself from all parts of the edifice, necessarily formed one of its most prominent features. And if the

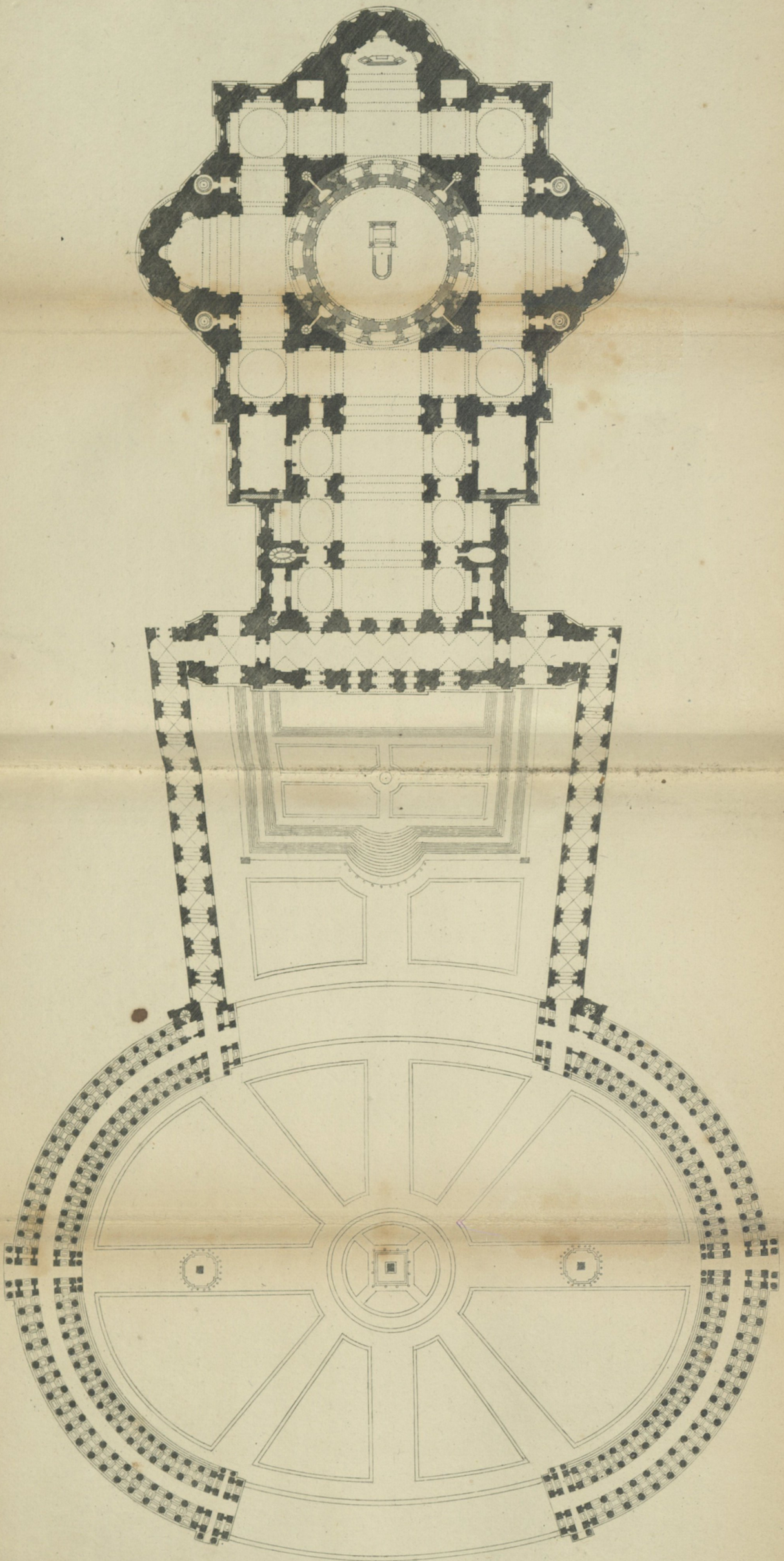
custom of placing the sanctuary and principal altar in this situation was for a time undetermined, it was because time had sanctioned their anterior disposition in the semicircular recess at the extremity of the edifice, from whence the construction of a plan thus disposed naturally conducted to the decoration of this part in a particular manner, and which could not fail to foster and give rise to the idea of erecting domes or cupolas.

The first cupola with pendentives, after the decline of the arts, was that of St. Sophia, at Constantinople, which exhibits the progression observed in productions of this kind. It cannot be positively asserted, that this dome is situated precisely in the centre of a cross, as the four branches have not the extent which it has since been customary to give to naves; in other respects the exterior form of this edifice is square, excepting one of the parts being prolonged more than the others, and terminated by a hemicycle, wherein the altar was placed. The first employment of pendentives, as forming a portion of the base of a cupola, is not of modern invention; the antique presents us with an example in a saloon of the thermæ Caracalla, the plan of which forms an octagon having eight pendentives, constituting a part of the base of the hemispherical arch with which it was covered.

The church of St. Mark, at Venice, which is

supposed by some to be formed from that of St. Sophia, at Constantinople, expresses in its plan the form of a cross still more distinctly. In reality there is but little similarity between the flat curved cupola of St. Sophia, and the five domes which rise in so singular a manner above the church at Venice. The plan of St. Sophia is of a form resembling those of the square saloons of the antique thermæ, having a portion of its sides decorated with a range of columns, and each extremity by a large semicircular niche. The pendentives, which form the circular base of the dome, spring from internal angles. Those of St. Mark are in projection, the principal nave being intersected by a transversal one at right angles. Lastly, the greatest similarity which exists between these two edifices consists in the style of their architecture, and certain parts of their decoration. The cupolas of these two churches, even those of St. Mark's, notwithstanding their elevated curve, present nothing resembling modern domes, namely, the elevation of a cupola upon a circular basement, forming a tower interiorly and exteriorly.

Passing over the numerous Gothic attempts, such as those at the cathedral of Milan, formed of ogives, the situation of which is announced at the exterior, by a species of decoration rising above the edifice, the cathedral of Pisa presents the first example. If Buschetto acquired any de-



PLAN OF ST. PETERS CHURCH AT ROME.

THE PLANS, ELEVATIONS, & SECTIONS, OF THE FOUR PRINCIPAL CHURCHES WITH CUPOLAS, IN EUROPE, ST PETERS, AT ROME, ST PAULS, AT LONDON, THE INVALIDES, AND STGENVIEVE'S, AT PARIS, ARE FROM THEIR EXTENT, NECESSARILY REDUCED TO ABOUT ONE THIRD OF THE SCALE OF THE OTHER PLATES.

gree of fame in the erection of this cathedral, it was not on account of its cupola, which forms so puerile and uninteresting an accessary of an edifice, that in other respects presents so important a feature in the history of architecture, but by the disposition and extent of its naves.

Brunelischi, who raised the cupola of St. Maria del Fiore, at Florence, was the first that presented the idea of double cupolas, as also their elevated curvature, which has generally been imitated in those that have since been erected.

The church of the Augustines, situated at the place Navonna, at Rome, is supposed by some writers to be the earliest example of a dome placed upon a cylindrical body or tower, supported by pendentives, which sprung from between the four arches that united the principal and transverse naves; yet Constantinople and Venice presented, a long time previous to the erection of the edifice in question, cupolas upon pendentives; and at Pisa and Florence we see examples of those raised upon a circular basement or tower. The church of the Augustines, above alluded to, existed but three hundred and eighty years.

The designs of Bramante, for the erection of St. Peter's, at Rome, were more pure and correct than those of Michel Angelo. The unity that exists between the actual dome and the other parts of the church is much admired; but a more per-

fect accord would have existed under more simple forms from the designs of Bramante. Being less burthened with details, and more correct in its forms and decorations, though of less dimensions, its proportions would have been greater; and being less ornamented, it would have been richer. Bramante intended to have imitated, in the naves of his church, the temple of Peace: the designs which he composed bear testimony to this idea. The divisions which the total presents are great and simple; no useless projection, nor complicated lines; but great and even masses, plainly ornamented, and crowned with an entablature destined to receive the spring of the arches. In the plan, details, and also the general form of his cupola, he appears to have borne in mind that of the pantheon. The simplicity of the immense naves which were to have formed its basement would have served to increase its intended richness. Bramante so well knew the effect that would result from this opposition, that he sought the same arrangement of contrast at each of the three extremities of the naves, where the colonnades that he adopted would have given great relief and harmony to this vast total, such as it is impossible to obtain by the employment of massives. It is, doubtless, questioned by some, whether Bramante did not sacrifice, in many respects as regards solidity, the possibility of the execution of his plan, to its

elegance and regularity; as we learn that, after his death, Peruzzi, Sangallo, and Raphaello, were employed to devise the most proper means to be adopted so as to render the supports of this great edifice of a sufficient consistence in proportion to the masses which they had to sustain. The foundations laid by Bramante were badly and too precipitately executed; Michel Angelo, who was afterwards the architect of this edifice, hastened to repair this fault, by strengthening those that were commenced, and devising the necessary means of securing the solidity of those connected with his own designs. He changed the form of the plan of Bramante from a Latin to that of a Greek cross, profiting from Brunelischi, in the idea of a double cupola; to which he proportioned the pillars and pendentives, securing such advantages in each part as the solidity of the construction of the whole required, and also making them subservient to the purposes of decoration.

Michel Angelo, more fortunate than Bramante, had successors who adhered to his designs. Vignola and Giacomo della Porta were compelled to follow them with exactness, except in giving a slight increase of elevation to the exterior curvature of the cupola. This production, so astonishing, from the immensity of its dimensions, and the great exertions that its construction required, is in its form and proportion, interiorly and exteriorly,

the most perfect example of its kind that modern architecture presents, nothwithstanding that puerile and unmeaning, although colossal façade, which serves it as a base. (See from page 120 to 129.)

Italy soon witnessed the employment of cupolas in almost all the edifices destined for religious purposes, each presenting similar designs to that of the great model at St. Peter's, with the exception, however, of some degree of variety in their construction or decoration, which in the present instance does not merit an enumeration. This taste for cupolas also spread itself through the rest of Europe. England and France, almost at the same period, entered into competition to rival the fame of modern Rome, in the construction of similar edifices. Sir Christopher Wren erected St. Paul's, whilst Jules-Hardouin Mansard raised that of the Invalides; the first resting its claim on its extent, and the second on the magnificence of its decoration. The most striking particularities in the construction of these two cupolas are, that Sir Christopher Wren was the first who formed apertures in the massive pillars of the dome, to serve as a free passage to the side aisles, (see from page 152 to 158);) and Mansard the first to produce that effect which arises from the judicious introduction of light, and the disposition of the double arches, or calottes, of the cupola which he erected. (See pages 150 and 151.) The latest production of any importance of this kind,

which will probably be the last, is St. Genevieve's church, at Paris. This example offers no remarkable differences in its conception from those already enumerated, except that its total, including the three calottes of its cupola, is constructed of stone, which will obtain for it a distinguished rank in the history of similar enterprizes. (See from page 161 to 164.) The opinion that this example will probably be the last enterprize of its kind is founded on the following reasoning. To judge of the invention and employment of modern cupolas or domes from the prodigious expense which they incur, from the different efforts that their construction requires, and the emulation that has induced the different nations of Europe to dispute the point of daringness, elevation, and magnificence, in productions of this species, or from the sentiments of admiration and different critiques that this subject has in turn called forth, would lead us to believe that their composition constitutes the great principle of the power of architecture, and that this discovery was wanting to complete the fame of the ancients. And again, that such a cupola as might present the various beauties contained in the finest works of this description, would form the point of supreme knowledge and of beauty in the art. Other critiques that have been made on this ambitious mode of construction, by developing all the vices which it has introduced into modern architecture, would

induce us to infer, that this pretended achievement has rather wasted the resources of the art than increased its dominion. In reality, say they, what has architecture profited by this introduction of forms, masses, and constructions, whose union is unnecessary, though immensely expensive? Did not the ancients construct vast interiors, as the naves of the basilicas, the proportions of which, both as regards their elevation and extent, were prodigious? Did they not construct cupolas of a superior dimension to those of the moderns? What then has this conjunction of the basilicas with cupolas produced? Nothing, except churches of a more imperfect decoration, and cupolas less solid. And further, what signifies this imposition of one edifice upon another? And what good results from this circular temple being placed upon one that is square?

These objections, answer the opposite party, are only specious. If the ancients have not united these two descriptions of buildings, which they separately employed in the formation of their edifices, it was because the uses to which their temples were destined rendered it impossible to draw from thence the idea of such a union. As regards this species of superfetation, which is considered as a pleonasm of intention, why not make the same objections to the repetition of stories, or any part which crowns another? When

the disposition of two naves which traverse each other appear to require some mode of decoration, so as more majestically to conceal their intersection; when the possibility presents itself of deriving, by the means of this disposition, a mass of imposing and magic light, and also of presenting an opportunity for the employment of a composition offering the grandest effects that architecture has ever produced; when the sight, which rests with pleasure upon pyramidal forms, and the imagination, which no less delights in all that bears the character of greatness and boldness of enterprise, seem to require a part to surmount the summit of our sacred edifices, whose aerial elevations ascend towards the Divinity to whom they are dedicated. What mean then these timid and confined ideas? Is it not allowable to elevate above any part which will serve as a base all that it is capable of supporting? and except the limits of possibility, is it not rather our senses and fancy that ought to determine the bounds which the artist should observe, than judgment, or a deduction derived from the principles of the art?

All these considerations have doubtless their value, particularly with those who appreciate architecture according to their caprice rather than by practical judgment, and who seek greatness in the excess of dimension in preference to justness of proportion. To gain, however, an impartial

knowledge of the causes that propagated the employment of cupolas, it may be observed that they rest on two precedents.

The first of these precedents may be traced to the taste transmitted by the Gothic mode of construction, in the employment of the antique architecture, at its revival by the moderns. When the secret of true sublimity and beauty was lost to the arts, and artists were ignorant of the means whereby real greatness is produced, they employed their imaginations to effect such projects as appeared marvellous and gigantic. They believed, that on increasing the decoration, or multiplying the ornaments, applied to any object, depended its degree of beauty; and that to exceed in greatness, it was necessary to exceed in height. It was at this period that the façades, towers, roofs, and belfries of churches, disputed with each other for the merit of elevation; their reputation being established according to their height. So that when the taste created by the purity of the antique began to manifest itself, and to redeem the then existing architecture from all these prejudices, which are in opposition to the judgment of an enlightened mind, the only one which it was found impossible to overcome was this prodigious height of construction, employed in the erection of churches. If an edifice had been raised at this period, possessing in its architecture all possible merit, it would,

from the power of habit, have been regarded as a timid production of a degenerated style of the art, if its extent did not happen to be equal to that of the Gothic naves, which ignorance considers, even at the present day, as examples of greatness and solidity, whilst the very nature of their supports discovers their weakness. Hence it became necessary to continue to erect these prodigies of elevation, to insure the public opinion in their favour as being imposingly hardy. The style of the antique architecture does not lend its aid to the accomplishing of these pretended prodigies, which have for so long a time entertained the eyes of the unlearned: the ordonnances of columns are too opposite in themselves to such dispositions as are favourable to these capricious frolics. When the orders of architecture are employed, it is necessary to adhere to the respective proportions which they prescribe; but if these are not considered to present sufficient solidity as points of supports to arches of an extended diameter, arcades with columns offer themselves, affording at the same time a regularity of decoration, together with that solidity which is requisite for supporting, even at the highest degree of elevation, the most extensive constructions. They also present the means of surpassing in height, greatness, and solidity, that barbarous style, without the aid of

all those contemptible stays that prop its frail elevations.

It was from the sight being habituated to behold the appendages, spires, towers, points, pinnacles, &c. placed in the air so as to present themselves at a distance, that the idea of cupolas was suggested to replace this futile trumpery, by presenting the same advantages; and it was adopted with emulation by all those cities, the inhabitants of which were desirous of establishing the fame of their churches.

The second precedent that gave rise to the employment of cupolas was, the form that was given to churches. The use that the early Christians made of the basilicas, for the public celebration of the mysteries of their religion, might have in some degree concurred to give those which were afterwards erected the form of a cross; but it appears certain, that at this period they studied to represent as often, and in as many situations and forms as possible, the sign expressive of their newly-established religion, and that, whether it was due to chance in the commencement, or to invention afterwards, the form of a cross became the characteristic of the plans of the churches of Christianity. It was doubtless the idea of uniting the principal and transverse naves at a common point by an imposing decoration, that gave rise to this

employment of cupolas; which offer many reflections to an enlightened judgment, that the repeated application of these objects cannot fail to call forth. Was it, however, really deserving of so much trouble and expence, to avoid, in the interior disposition of churches, the defect occasioned by the point of intersection of the naves, to conceal which the cupola is said to have been employed? Would it not have been more effectual to have avoided this defect, by adopting a more simple form of plan? Was this form of a cross prescribed in such a manner that it could not be renounced? Does not a multitude of examples prove the choice of the forms most suitable for Christian churches to be perfectly free? What a sacrifice of expense this disposition of the form of a cross incurred, whilst, at the same time, it produces less effect than might otherwise have been obtained; for if the expense occasioned by the transverse nave, which presents an insignificant addition, had been employed in enlarging or embellishing the principal nave, how many advantages would have been gained, both as regards unity, and all the other qualities which serve to perfect the art!

Since the time that these prejudices lost a portion of their influence, true greatness has been acknowledged to exist in proportions, and not in dimensions; and the pure and rich style of the antique ordonnances have replaced the massive

piers of the moderns, which are of considerable dimensions, and present few openings. Thus it was discovered that the construction of cupolas must necessarily be renounced; and the more the antique style was introduced in the composition of churches, the more this unnecessary combination (that incurs an expense equal to ten churches constructed according to the laws of correct taste, and offering in their place but one, and that imperfect,) has fallen into disrepute. The most striking proofs of the want of solidity in certain cupolas has, perhaps, further contributed to suppress their employment. The most noted of all, that of St. Peter's, has occupied, during half a century, the continued care and inspection of several architects, by manifesting in its construction many very considerable rents. Bortari, more than any other, applied himself to discover the means by which the security of this edifice might be insured, and declared the generality of similar constructions to be liable to the same disadvantages. If time and experience proves, independent of any opinion on this subject, that this description of constructions are subject to an incurable evil, can any reasonable mind confide the fame of a nation on a species of construction which, although it incurs the most enormous expense, contains in its very nature the germ of destruction? The greatest advantage of architecture is in the property it possesses of

immortalizing the genius of the nation that has employed it. It is surely necessary, therefore, in important national edifices, to be assured of their duration. Indeed, the pleasure derived from the appearance of edifices is more dependent than is generally imagined on the idea which is formed of their solidity. Numerous other observations might be made on the nature of these constructions, as regards the want of unity they occasion in the interior of churches, in the form of a Latin cross, and also the dissonance and want of harmony of their exterior, which presents a circular temple, elevated, or apparently situated, upon the roof, or above the pediment of the peristyle of a quadrangular edifice, which serves it as a basement. It is reserved for the judgment of others to determine how far these considerations may be applied to the employment of cupolas. And without attempting to prescribe to what extent, as regards an exact imitation, the form and disposition of the ancient basilicas may with propriety be followed in the composition of our churches, it is, however, manifest that they ought not to be lost sight of. If designed after this manner, they would present a regularity in their plan, joined to a nobleness in their elevation ; and the talented artist would find himself enabled, by following this form and disposition, to produce, not only beauty in their interior, but also that magnificence at their exterior,

of which the antique temples have left us such imposing examples. In concluding this article, it will, perhaps, be no less interesting than useful to present a comparative table of the different heights and diameters of the most celebrated antique and modern cupolas.

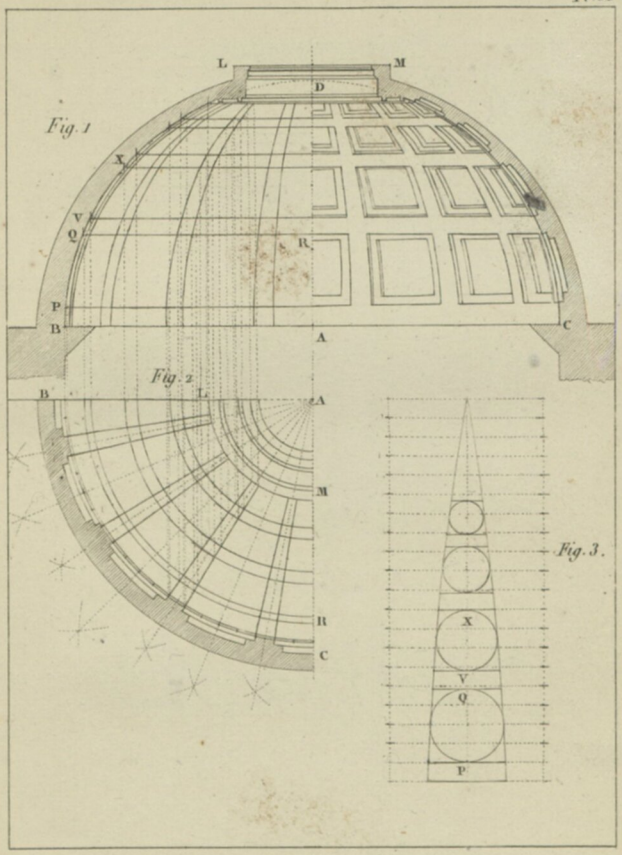
METHOD OF TRACING THE COMPARTMENTS OF CUPOLAS.

Plate 51.

FROM the centre A, fig. 1, describe the arc B, D, C; likewise from the centre A, fig. 2, trace the plan B C, and determine the number and proportion of the compartments and their intervals, which must be prolonged to the centre A; afterwards trace the intervals, or horizontal divisions, B P, Q V, &c. fig. 1, which, by drawing lines from each of these points parallel to line A D, and prolonged to the line A B, fig. 2, will give the circular divisions in the plan. In like manner the curved lines in the elevation are obtained, by raising perpendiculars from each determined point of the lines in the plan which tends towards the centre, bisecting

Compartments of Cupolas.

Pl 31



A COMPARATIVE TABLE OF THE PROPORTIONS OF THE MOST CONSIDERABLE CUPOLAS,

CONSTRUCTED IN VARIOUS COUNTRIES, AND AT DIFFERENT EPOCHS, FROM THE EARLIEST TO THE PRESENT TIME.

FIRST EPOCH.

Antique Cupolas, constructed previous to the reign of Constantine.

NAMES OF THE CUPOLAS, *And of the countries in which they are situated.*	Interior diameter, taken at the spring of the cupola.		Height of the interior, taken from the pavement of the edifice to the summit or border of the aperture of the cupola.		Period at which their construction was completed.
	Feet.	Inches	Feet.	Inches	Before Christ.
ROME.					
Cupola of the Pantheon	143	7	141	1	18
Cupola of the Temple of Minerva-Medica, whose plan presents a regular polygon of ten sides	77	6	97	1	0
PUZZUOLI.					
Cupola of a Temple of Diana	97	9	77	10	....
Cupola of a Temple of Venus	87	1	76	9	....
ROME.					
Cupola of an Antique Temple, at the present time forming a part of the Church of SS. Cosma, e Damiano	42	8	40	6	....
Cupola of a Temple of Bacchus, now the Church of S. Constanza	37	10	65	1	....
Cupola of the Circular Saloon belonging to the Thermæ of Caracalla, taken from the existing ruins, and the restorations of Palladio	112	4	116	3	Anno Domino. 217
Cupola, Circular, with pendentives, in an octagon saloon of the last mentioned Thermæ	62	9	68	3	217
Cupola of a round Saloon of the Thermæ of Diocle-sian, now the Church of S. Benardo	74	0	83	0	302
Cupola of another of the same Thermæ, at present serving as Vestibule to the Church	63	2	74	8	302

SECOND EPOCH.

Cupolas constructed from the reign of Constantine to the time of Bramante.

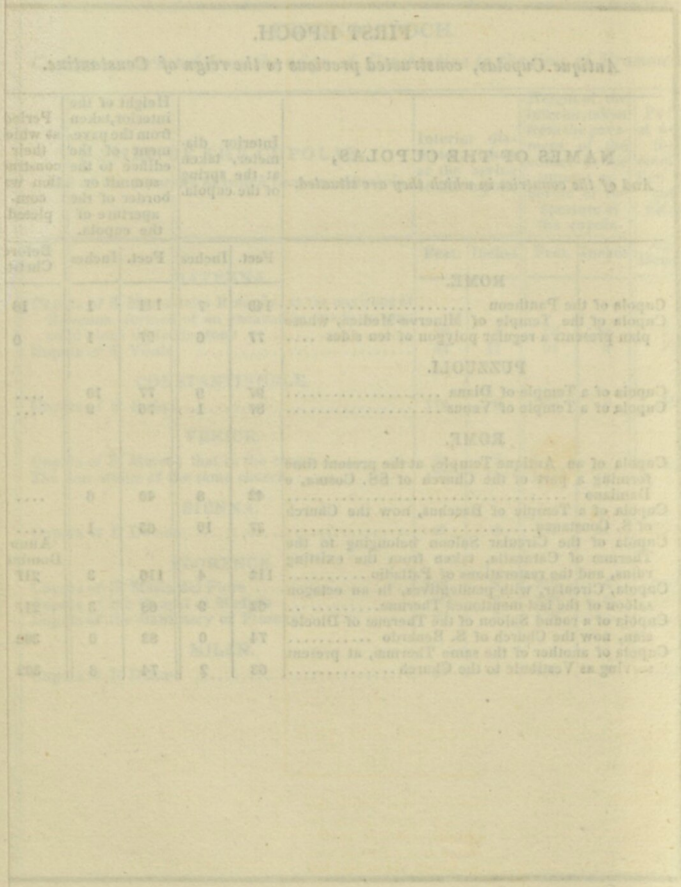
NAMES OF THE CUPOLAS, *And of the countries in which they are situated.*	Interior diameter, taken at the spring of the cupola.		Height of the interior, taken from the pavement of the edifice to the summit or border of the aperture of the cupola.		Period at which their construction was completed.
	Feet.	Inches	Feet.	Inches	Anno Domino.
RAVENNA.					
Cupola of S. Maria della Rotonda, at the environs of Ravenna, formed of an excavation made in one solid block of Istria stone	36	3	60	10	530
Cupola of S. Vitale	54	11	91	2	547
CONSTANTINOPLE.					
Cupola of S. Sofia	112	0	201	8	537
VENICE.					
Cupola of S. Marco; that in the centre	44	3	....	....	984
The four others of the same church	34	10	....	....	
SIENNA.					
Cupola of Il Duomo	57	3	147	11	1250
FLORENCE.					
Cupola of S. Maria del Fiore	138	8	310	4	1436
Cupola of the Chapel di Medicis	91	9	199	6	1636
Cupola of the Babtistery of Florence	85	8	110	....	....
MILAN.					
Cupola of Il Duomo	57	5	253	1	1426

THIRD EPOCH.

Modern Cupolas, constructed from the time of Bramante to the present day.

NAMES OF THE CUPOLAS, *And of the countries in which they are situated.*	Interior diameter, taken at the spring of the cupola.		Height of the interior, taken from the pavement of the edifice to the summit or border of the aperture of the interior cupola.		Period at which their construction was completed.
	Feet.	Inches	Feet.	Inches	Anno Domino.
ROME.					
Cupola projected by Bramante for St. Peter's	142	3	301	3	....
Cupola of the Tempietto di Bramante	14	8	34	5	1502
Cupola of Madonna di Loretto	48	6	92	5	1507
Cupola of St. Peter's, as executed by Michel Angelo	138	8	330	9	1580
Cupola of S. Agnese, in Piazza Navona	56	5	158	5	1660
Cupola of the Church del Gesu	53	3	151	6	1578
Cupola of S. Maria, in Vallicella	44	10	118	10	1599
Cupola of S. Luca, e S. Martina	38	6	107	2	1668
Cupola of S. Andrea della Valle	54	11	192	4	1607
Cupola of S. Carlo al Corso	49	10	186	7	1664
Cupola of S. Maria in Portico	56	6	124	8	1665
PLASENCIA.					
Cupola of S. Agostino	30	11	114	10	1564
VENICE.					
Cupola of a Church at Trevigiano, by Palladio	40	9	51	6	1560
Cupola of S. Giorgio Maggiore	41	....	117	....	1566
Cupola delle Zitelle	45	7	87	9	1570
Cupola of Il Redentore	46	9	119	6	1580
Cupola della Madonna della Salute	69	10	133	6	1640
NAPLES.					
Cupola of S. Filippo	38	5	112	7	1592
TURIN.					
Cupola of S. Lorenzo	47	5	108	10	1664
Cupola della Superga	64	....	128	....	1731
PALERMO.					
Cupola of S. Giuseppe	40	....	128	....	....
Cupola of S. Michele	35	3	69	10	....
LONDON.					
Cupola of St. Paul's	108	10	216	1	1710
PARIS.					
Cupola des Invalides	80	6	173	8	1704
Cupola of St. Genevieve	66	10	189	11	1790

The names of the different cities are arranged according to the earliest period at which the construction of the edifices they contain were commenced.



the horizontal lines of the elevation. The fig. 3 is a developement of the proportions of the ornaments and intervals of the compartments. For the details see plate 55.

OF DECORATION.

IF architecture be examined, independently of the science of building or construction, it presents itself to our view under the special relation of decoration. Indeed architecture, when thus considered, is the art of embellishing constructions, and of creating pleasure to man, through the medium of the forms commanded by necessity. To accomplish this, it employs two principal means. The first of these is the art of proportion, the second that of ornament.

Although proportion is the first, and one of the most sure means that architecture employs to create pleasure, yet, as it requires considerable knowledge to appreciate the just proportions of approximate forms, the effect produced will be dependant upon the understanding of the observer. Indeed, though there can be no judicious decoration without proportion, the latter is not ordinarily

considered amongst the means employed in decoration.

The second means is the art of combining ornaments, and of disposing them so as to form a part in the general system, in the total, and in the particular qualities suitable to each edifice.

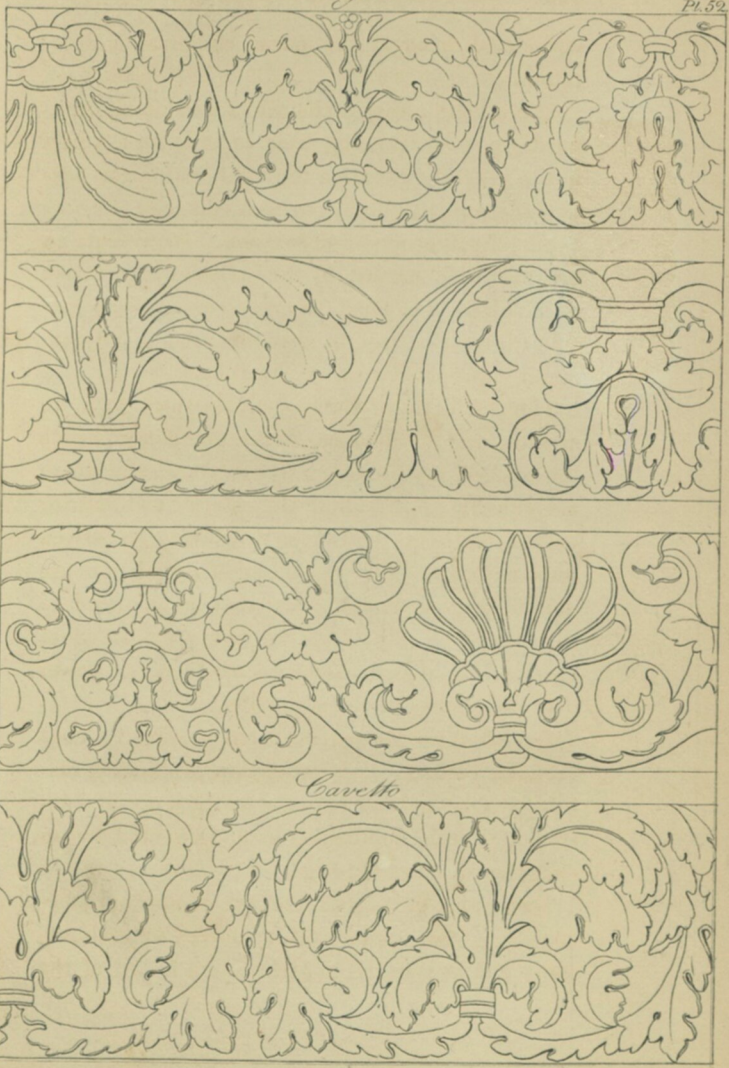
Such is the art of decoration. It presents an architect with means, by the judicious application of which he is enabled to give to an edifice a specific expression, and to inscribe upon it the character appropriate to its destination.

Independently of the resources which form an architectural ordonnance, decoration comprehends those which are presented by sculpture, and which are equally applicable to the exterior and interior parts of edifices; and those which may be derived from painting. The resources of decoration are indeed so considerable, that they may be said to comprise even a part of the means employed in construction, and to exercise some degree of power over the quality of the materials.

But all these means, far from serving to characterize edifices, or to make their destination distinguishable, become only the instruments of confusion, if their application be not directed by an enlightened understanding.

Decoration in itself is the art of appropriately employing the ornamental resources of architecture; and as richness in architecture is one of the

Cyma



Cavetto

signs representative of power, greatness, and majesty, to employ the same species or proportion of richness or decoration to all edifices, would be a manifest and glaring impropriety. It must be evident, therefore, that an architect is not at liberty to employ these resources indiscriminately; that the nature of each edifice indicates the kind and the proportion of decoration which appropriately belongs to it, according to the qualities which constitute the expression of character suitable to its destination.

Considered in its partial resources, or in its details, decoration is a language the signs and expressions of which ought to present a precise signification, capable of conveying to the mind the intended ideas. Without this, it forms but an unintelligible jargon, composed of puerile and insignificant formules, or of signs that are mute to the mind, the capricious and fortuitous distribution of which is calculated only to attract the attention, at the expense of shocking the understanding.

It is in vain that the artist possesses the most energetic means of expressing his ideas, and of giving to his edifices a species of visible, though mute eloquence, in the resources of decoration, without he endeavours to attain that intelligence which is requisite to profit ably by those resources.

The origin of decoration, taken generally, may

be deduced from the passion for variety, and that admiration of beautiful forms so natural to man, which impelled him to devise the means of multiplying and varying his sensations, and consequently of increasing the sources of his pleasure and happiness.

The utility of decoration becomes manifest from a consideration of the necessity of characterizing edifices according to the ends for which they may be designed. To construct a prison and a palace alike is an absurdity that needs but to be mentioned to be admitted; and to say that because the decoration and construction of the one is characterized by largeness of division, and whatever may contribute to the appearance of strength, &c. the other ought not to be characterized by elegance of form and proportion, and richness of decoration, would be to deny the utility of architectural character in buildings, and to destroy one of the most classical sources of pleasure which this art possesses. From hence two general rules may be inferred. Firstly, that decoration ought at least to appear to be necessary. Secondly, that it ought to employ only such objects as are in relation with the general design to which they are applied.

In saying that decoration ought at least to appear to be necessary, is meant, that all the parts of edifices cannot be considered as being alike susceptible of receiving ornaments.

By a necessary decoration is understood, that just application of ornaments, the absence of which would produce a vacancy in the mind, and the presence of which tends to express the nature of the object to which it is applied, by developing its character, in a direct appeal to the sense of sight. It derives the motives of its inventions or combinations from the particular properties of that which it is intended to embellish, or from the circumstances relating to them; and it draws its objects, and the necessity of varying them, from three sources, which it is important should be well understood, namely, the passion for variety, from analogy, and from allegory. Indeed, in the decoration of the antique architecture, which of all others is the best systematized, there may be found a considerable number of forms and details for which no other apology can be offered than that of the pleasure which is produced by the variety. There is an effect which ornaments of all kinds produce in architecture; it is that of multiplying and of strengthening the impressions which they are capable of exciting in the mind, by the variety in their forms and application. These impressions depend on the qualities which are developed in decoration, and which may be reduced to those of greatness or power, order or harmony, richness, and variety. Indeed, it must be evident, that the absence or presence of ornaments in architecture,

like colours in painting, modify the appearance of the total, and give to an edifice all the variety of expression that our minds are capable of receiving. The disposition of the objects employed in decoration is another mean which contributes to the production of agreeable sensations. A judicious arrangement of decorative objects, resulting from a correct taste in forming combinations, and an adequate conception of order and harmony, cannot fail to produce corresponding sensations in the mind of an observer. The details of ornaments form so important a part of the pleasure which results from a perfect accord in an architectural composition, that the effect which would otherwise result from correctness of proportion and harmony of design, may be totally destroyed by the confused application, or the injudicious employment of decorative objects. There are many edifices which would be acknowledged as good architectural productions, were they stripped of their decorations, and those decorations replaced by others chosen with judgment, and applied with taste. A beautiful edifice may be defined an object of harmonious relations of order and disposition. It is essential, however, to its correctness as an architectural production, that its ornaments be in unison with the order according to which it is constructed ; and it is therefore important to bear in mind that each of the orders has its appro-

priate ornaments, the character of which corresponds to that of its form and proportion. The Doric order, which expresses strength and simplicity, admits of ornaments being placed on the contour of its capital, on its frieze, and different mouldings of its cornice; but they must participate of its general style and proportion. The Ionic, which from its proportions, forms, and modinature, is considered as the medium order, admits of the application of a greater number of lighter and more varied ornaments on its capital, and the mouldings of its entablature. The Corinthian, by a more abundant and diversified employment of all the details of ornaments, on its base, capital, and the other parts of its ordonnance, establishes such an accord between its proportions and forms, that gives it the property of expressing the qualities of richness, lightness, and magnificence.

Sculpture is the great means which architecture employs to decorate its productions. The ornaments which are applied to the different parts of an edifice by this means may be divided into two kinds. The first consists of compartments, which may be subdivided into large and small, of which the former are panels of considerable dimension, arranged with others that are smaller; the latter is a compartment of much less extent than the former, containing a rose, or other ornament, conformable to its figure, and which occupies the

centre of the first. It may be employed in the form of a square, lozenge, pentagon, hexagon, octagon, and circle; the larger compartment may also assume an equal variety of forms. Plate 55 presents examples adapted both for flat and cylindrical surfaces, together with the details of sculpture applicable to this description of ornaments, the enumeration of which may be concluded by referring to plate 2, figures 11 and 12, for examples of those applicable to the soffits or platbands of architraves.

The second kind of ornaments may also be divided into two species. The first consists of posts, or scrolled foliage, composed of acanthus leaves and flowers, with which genii, tripods, or animals, are sometimes combined. These species of ornaments are generally applied to the frieze of the Ionic and Corinthian entablatures. To this species likewise belong festoons and garlands, composed of flowers and fruits, which may be employed either together or separately. Sometimes they are simply formed of oak or laurel leaves. Festoons and garlands are applicable to the same parts as scrolled foliage, and may be also adapted to decorate some portion of extensive plain surfaces, such as the faces of walls. This first species of the second kind of ornaments may be terminated by adding the roses applied to the compartments of ceilings, those which belong to the abacus of

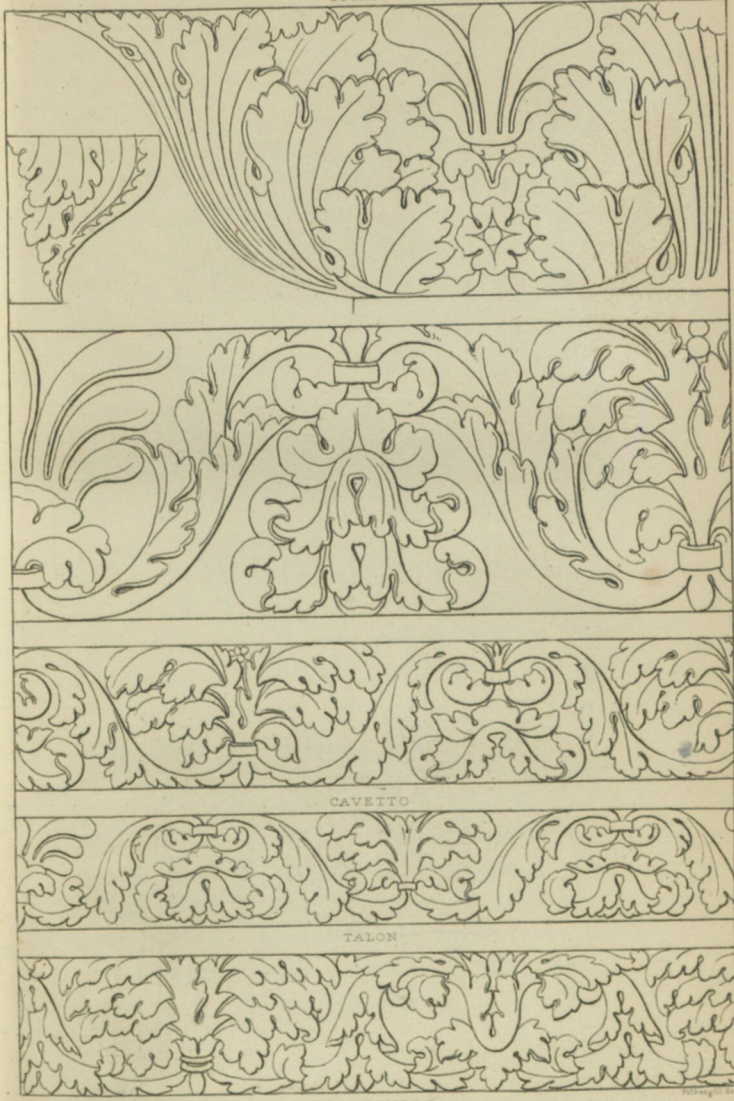
the Corinthian capital, and the culots, or masses of upright leaves, from whence the different foliage, in general, spring, which may be applied according as the nature of the compositions may appear to require them. The last species of ornaments of the second kind are, acanthus, olive, and water-plant leaves, which possess the particular qualities of not materially altering the forms of the mouldings to which they are applied, which are the cyma, cavetto, and sometimes also the talon. This latter moulding is occasionally enriched with trefoil, and flower-work with water-plant leaves. The quarter-round is generally sculptured in oves, or other ornaments presenting a similar appearance, which are ordinarily separated by darts, and on some occasions by small flutings. To the astragal, chaplets or beads are commonly applied, the forms of which are susceptible of a very great variety. The pine apple is the last description of ornament belonging to this species, and is employed to detach dentils at their angle or return.

It may easily be conceived that it is neither possible nor necessary to give a more particular definition of each of these ornaments, the form of many being sufficiently designated by their own denominations, and a knowledge of which will be more easily and effectually obtained by an inspection of the examples presented in plate 2, figures 13 and 14, and plates 20, 21, 52, 53, and 54.

Independently, however, of the possibility of assigning any particular origin to some portion of these objects, or the reason of their employment in decoration, otherwise than from the passion for variety, it is, nevertheless, required from the artist, that he be capable of making their utility apparent in the effect which they may produce in the total of architectural compositions. If, therefore, the application of these different ornaments be not guided by judgment, and a proper consideration of the relation which ought to exist between the extent of their employment and the destination of an edifice, the true expression of the character of the total will be proportionately injured, and consequently the general effect, which might otherwise result, be destroyed. In order to perfect its decorative language, architecture is obliged to draw upon another source, and to increase its means of expressing character by an appeal to analogy. The aid of analogy, however, could only have been called in after a considerable diffusion of knowledge, as it was necessary to understand the analogy, or it would fail in its intended effect. This was not the case with simple variety. The language of analogy is progressive in its nature, and is not the same in all countries, as it has its origin in the connexion which exists between certain forms and the purposes to which they have been, or are, usually applied. The gloom of a prison is pro-

ORNAMENTS OF MOULDINGS.

CYMA



CAVETTO

TALON

CYMA REVERSA

verbially and inseparably connected with massive walls and imperfectly lighted apartments, whilst ideas of pomp, magnificence, pleasure, and gayety, are as inseparably connected with the elegant form and proportion, and the rich decoration of a palace. The idea of pleasure, &c. on the one hand becomes associated with edifices of elegant form and proportion, richly decorated, and beautifully executed; whilst on the other, the rough-hewn massive walls of a prison are associated with misery, affliction, and gloom. Between the two extremes, a palace and a prison, there exists many grades,—to characterize which appropriately will call forth the judgment of the artist. If it be required that an edifice should express one of the intervening qualities, such a disposition of the parts must be adopted, and such ornaments chosen, as are in unison with the intended effect. The employment of such ornaments as present the most finished execution, and are light in their details, gives rise to that idea of richness, which is a never-failing source of pleasure to the beholder. If, on the contrary, the intended effect be that of resistance or strength, few ornaments must be admitted, because that division of the parts which results from their employment weakens the idea of strength, and sometimes also reduces that apparent solidity which is necessary to its character. The only ornaments admissible in this case are

such as present but few details, or that appear to be principally dependent on the construction itself.

The objects of decoration, drawn from the analogy of the primitive constructions of necessity, have in the commencement of this work been sufficiently made known, and therefore require no farther enumeration. The bases, shafts, and capitals, of columns, parts of the entablature, soffits or ceilings, and pediments, bear with them such incontestable marks of their origin, as not to require further proof. Thus modinature forms a very important part of architecture, as also one of the bases of decoration, proceeding from the system of analogy, which constitutes the principle of imitation in the art.

It is doubtless possible, by the scrupulous employment of the indicative types of the origin of the art, to join all the variety that the taste of decoration requires, and, without altering their forms, to multiply, almost indefinitely, the shades of character which each edifice ought to receive. The system of architecture, and its division into three styles, proves how capable the forms of necessity are of admitting in their decoration a well-characterized expression—how well they are adapted to receive a progressive gradation of richness or simplicity, of variety or uniformity. This constitutes a very intelligible language, the value of which is proportionately enhanced when the

artist knows how to express his ideas, and the spectator is able to comprehend them.

Ornaments, in the almost special sense in which they have been hitherto considered in this article, are particularly composed of objects sculptured upon mouldings and profiles, and those which are applied to the surfaces of the principal forms of architecture. The effect, however, may be considerably modified by the execution of these kinds of ornaments. They are a species of characters, the expression of which sculpture is enabled to render more or less striking, by giving to them, in the execution, more or less projection, tracing them lightly or deep, or exhibiting in their contours a greater or less degree of sharpness, and consequently detaching them with more or less vivacity. Thus all the different shades which may be produced in their effects contribute, in some measure, to the expression of character. In the execution of ornaments, it is also essential to take into consideration the dimensions or extent of the edifice; and the distance of the parts, intended to be sculptured, from the sight, should also be considered. There is a soft and light, strong and deep, a rough and a finished manner of executing ornaments, which is governed, like that of statues, by their dimensions and the point of sight.

Another great source from whence architecture has enriched its decorative powers, and draws its

most numerous and best adapted means of hieroglyphic expression, is allegory.

Allegory is the simple and natural language of the imitatvie arts, which convey their meaning through the medium of signs and figures. From the application which architecture makes of this language of the arts, and the symbols which it affords, the most abundant means are obtained of giving to the decoration of edifices as determined a signification and distinct property, as is possessed by each of the arts from which those means are drawn.

The resources which allegory presents in decoration are such as to enable an architect to characterize all species of compositions by its symbols. It is in its decorative appropriations that architecture becomes a powerful auxiliary and handmaid to history. It explains thereby the general and particular object for which an edifice was destined; informing us of the moral or physical purpose for which it was employed. Allegorical decoration is more expressive than all the inscriptive matter which it may be possible to make use of.

When the suitable compositions employed in the decoration of an edifice have been drawn from allegory, we are enabled, even from its ruins, to make known its destination. How many of the antique edifices would have sunk into a nameless oblivion, and their destination have remained for

ever unknown, if some fragments of their allegorical decoration, found amongst their remains, had not explained to us what they were, and the uses for which they were employed! The principal objects made use of in allegorical decoration, whether employed by means of painting or sculpture, may be divided into three classes. The first comprehends attributes, the second is composed of figures, and the third embraces subjects of composition.

Under the name of attributes are comprehended all the symbols and emblems, rendered visible by means of painting or sculpture, which become, by their conciseness, a species of monograms in the figurative composition of architecture. At the head of attributes may be placed the greater part of foliage and plants, which form so important a feature in the composition of ornaments. It was from the religious ceremonies of the primitive race, from their desire to deck and embellish, by the productions of nature, the constructions dedicated to their deities, and also from the offering of fruits, plants, and roots, at their oblations and sacrifices, that the greater part of compositions presenting scrolled foliage bearing fruits and flowers took their origin. It would be difficult to contradict such an etymology, since even at the present period, and in the midst of an artificial luxury of decoration in edifices, the natural decorations just mentioned are employed in civil and religious *fêtes*.

Thus garlands, festoons, flowers, wreaths, and the foliage of capitals, owe their origin to the same source. Each of these objects may, as an attribute, or emblem of a known and expressed custom, be employed in decoration with a special and characteristic signification.

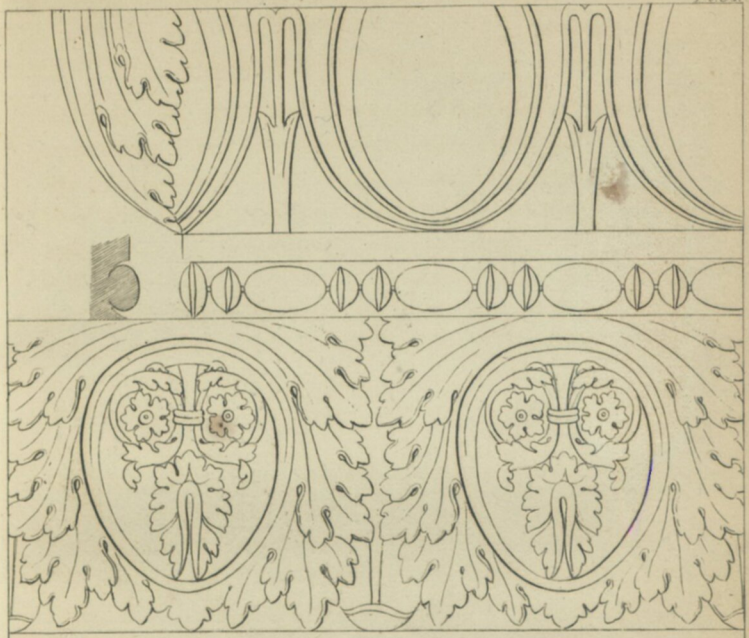
The instruments of sacrifice, ornaments of the sacrificer, sanctified vases, heads of the animals sacrificed, fillets, pateræ, and all those objects that were employed in that part of the worship of the ancients, have been transmitted as attributes in the decoration of sacred edifices. Architecture has made conventional signs of all these emblems, which, notwithstanding the differences of custom adopted in modern worship, are no less received as a metaphorical means of indicating the destination of the edifice to which they are applied.

Amongst the ancients each divinity had its particular attributes. Indeed, the divinities were but a species of attributes expressive of the different properties of nature, or the physical or moral relation of things. Although there is no longer any faith in the powers of Jupiter, Venus, Neptune, Nymphs, Diana, Apollo, the Muses, and the other figurative beings, the ideas attached to these allegorical forms, and their relations to the different qualities, &c. of which their names and figures are the representation, cannot be dispelled. The attributes which form their retinues have,

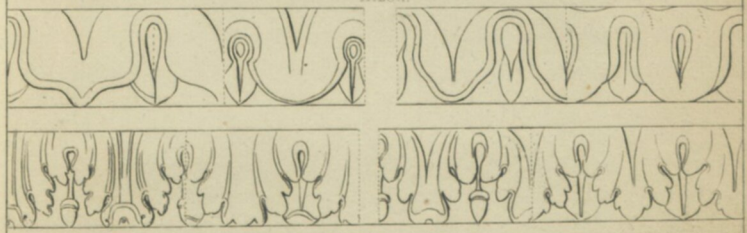
ORNAMENTS OF MOULDINGS.

QUARTER ROUND.

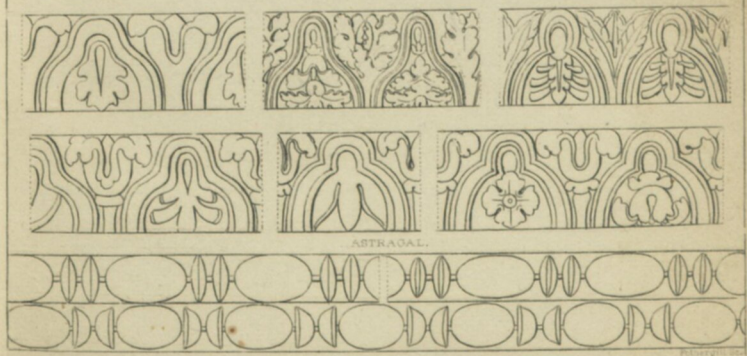
Pl. 54.



TALON.



ASTRAGAL.



indeed, long been admitted as so many devices or emblems, which constitute the figurative language of the imitative arts. Architectural decoration, above all, profits by them to characterize its productions. The eagle and thunderbolts were, with the ancients, the symbolic representatives of eternity and almighty power; the myrtle-branch and the dove characterized affection; the lyre and the laurel-branch were the symbols of harmony and of fame; and the employment of shells, dolphins, &c. in an edifice, indicated its devotion to aquatic purposes. The helmet and lance were the symbols of war; the palm-branch and wreath announce victory; and the olive, peace. The balance is the natural and beautiful representative of justice; the quiver and arrows, the synonyms of cupid; and the serpent, of Æsculapius. Ears of corn, of Ceres; the owl, of Minerva; and the cock, of Mercury: which were themselves considered as the presiding divinities over abundance, science, and vigilance.

The instruments belonging to the arts and sciences are all objects which may be employed as the natural ensigns of those purposes for which an edifice may be destined. The matter that the combination and employment of attributes affords to decoration is as varied as it is extensive. They may be changed, modified, and reproduced under different forms, by the genius of the artist, taking

care not to sacrifice the clearness of their expression to novelty of combination. There is in this respect a medium to be observed, so as not to present to the sight enigmas in place of inscriptions. There are certain given forms and acknowledged attributes which require to be judiciously applied, as well as precedents which it is necessary to respect. But the most essential thing in their application is, that the greatest possible judgment and discretion be observed in their distribution, and in the choice of them, as regards the relation which they bear to each other. How inconsistent it must appear to apply sphinxes to a fountain, to vomit water; trophies to a monument, not triumphal; or the symbols of the arts, and those of the virtues, to places serving as receptacles for neither art nor virtue! Indeed, the inconsistencies which have been, and even now are practised, in the decoration of modern architecture, are almost innumerable.

The second class of objects which architecture employs in its allegorical decorations is composed of figures. Figures may be considered either as relates to the subjects that they express, or the manner in which they are employed. Figures, with respect to the subjects intended to be expressed, may be divided into two kinds, simple and composed. Composed figures are those which have taken their origin from the hieroglyphical style of

writing, and were originally figures of objects, serving as real characters, but which, by an early license, were transmitted into architectural decoration, although their literal value was lost. It is named the arabesque style, and is for the greater part composed of capricious, fantastical, and imaginary objects, represented in architecture by painting or sculpture, and employed in the decoration of walls, panels, sides of doors, surfaces of pilasters, friezes, and sometimes to the soffits of flat and cylindrical ceilings. This style is composed of three things which are very independent of, and present themselves in a distinct manner from, each other.

The first comprises those representations and architectural compositions, the irregular and capricious forms of which are mostly taken from oriental monuments and edifices, and were introduced into decoration amongst the Romans, as the absurdities of the Chinese have been introduced into this country.

The second is composed of all kinds of figures, such as imaginary animals, and the union of the head and foreparts of one species of animals with the body, &c. of another, of which sphinxes are examples. Such forms served, in the early ages, as signs of a language, or the allegories which they represented belonged to the dogmas of the Egyptian and oriental mythology.

The third comprehends scrolled foliage, festoons, leaves, and other similar objects, invented by the Greeks and Romans, and employed by them in their edifices either by the means of painting or of sculpture.

The most numerous examples of this species of architectural decoration, as practised by the ancients, are those presented in the remains of the thermæ of Titus, and those at Pompeii. Almost the whole of the interiors are decorated with views and perspectives of edifices, the singular forms and compositions of which, instead of having excited researches into their cause and origin, have given rise only to erroneous opinions, and strange conjectures.

The Romans, like all nations habituated to luxury, sought pleasure in the novelty and variety produced by differences in style and taste. Yet this is certain, that they never extended their caprice, as has been practised in this country, to such acts as those of realizing, in a durable manner, designs of edifices presenting the most barbarous styles, the contrast produced by which would have been considered by them as too revolting.

The most severe critic can find nothing to condemn in that description of arabesque which is composed of scrolled foliage, leaves, and running ornaments, the origin of which can only be attributed to the same causes, as ornaments in general.

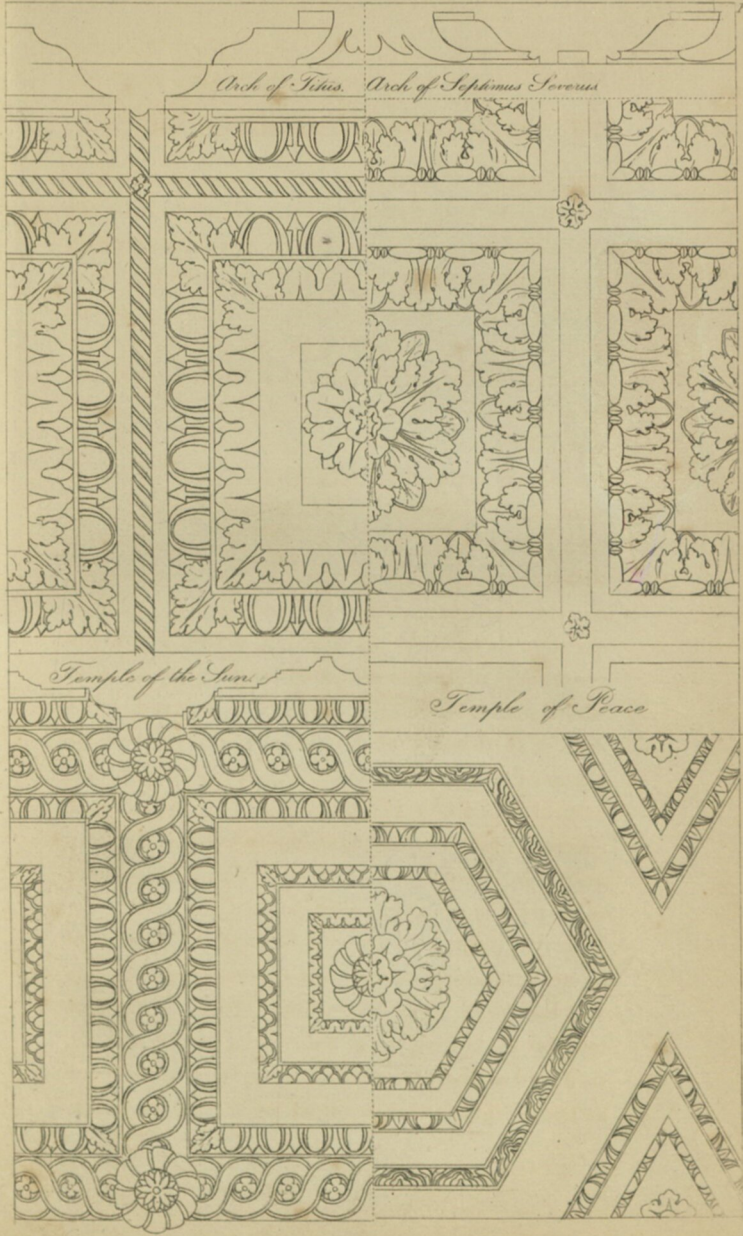
The best examples of this species, executed in painting, are those of the thermæ of Titus, and those at Pompeii. Those executed in sculpture are, the face of the pilasters of the arch of Pola, in Istria; the arch of Titus, at Rome; and the fragments of the villa Medici. These examples are models of taste and execution, in which the artist will always find fresh resources for the embellishment of his edifices. Such compositions as the foregoing should not be confounded with those so justly reproved by Vitruvius, which present an extravagant compilation of objects, composed of unnatural forms. After having spoken on the taste of the ancients in decoration, who, in all subjects of painting, represented the objects as they naturally were, this author remarks, "I know not from what caprice the rule which the ancients adopted is not still followed, of always taking such things for models as are consistent with nature. For the paintings that are at the present time executed upon walls, instead of forming real and regular imitations of objects, present nothing but extravagancies. In place of columns, reeds or stems are substituted, bearing interwoven fluted branches of plants, having their leaves divided and turned in imitation of volutes. Small temples are placed upon the summits of candelabra, from whence, as if they had roots, scrolled foliage rises, upon which figures are seated. In

other places flowered work is represented as connected with half figures, some of which bear the heads of men, and others those of animals, which are things contrary to the laws of nature. Such is the power of habit or mode, whether it proceeds from indolence, or from want of judgment, that the greater part of persons shut their eyes to the true principles of the arts. For how can it be supposed that these reeds sustain a roof; that the candelabra support an edifice; that weak branches bear figures; or that half-formed figures could spring from their stems, roots, or foliage? Notwithstanding, no one corrects these impertinences; on the contrary, they are encouraged, without question as to their consistency, so little are the generality of minds capable of judging of that which merits to be approved and authorized. For myself, I think that painting ought only to be esteemed in proportion as its representations are natural and true; that it is not sufficient that the execution be good, but it is also necessary that the design be reasonable, and that it present nothing to shock the understanding."

In this passage, Vitruvius has defined the nature of arabesques in as correct a manner as he has also indicated their origin and history. From it may be perceived, that this style, which was introduced at the period at which he wrote, had not as then attained that point of perfection by which

ORNAMENTS

DETAILS OF THE COMPARTMENTS OF FLAT & CYLINDRICAL CIELINGS.



it was afterwards distinguished. Nevertheless, when we reflect on the superiority that accompanied all species of decoration amongst the ancients,—on the character of originality which they always presented—when we examine the astonishing variety that the antique arabesques offer, their masterly execution, the charming details which they contain, the happy ideas and valuable analogies which they afford, it will be seen why the minds of so many able men have been seduced by them. Nor will it be difficult to discover why the greatest man of whom modern painting can boast, did not judge them with as much severity as Vitruvius.

About the fifteenth century, when the arts had reached a higher degree of perfection than they have ever since attained amongst the moderns, Raphaello, on the discovery of arabesques presented by the fragments of the thermæ of Titus, though they offered but a sketch of antique painting, discovered therein that which was sufficient to inspire a mind so acute and penetrating. He succeeded in restoring and redeeming the taste of decoration, and all the details of ornaments condemned until then to the arid monotony of the Gothic. The secret of stuccos was discovered; the preparations of the ancients reappeared; and arabesques were employed in the decoration of the most magnificent palaces. This style, executed

by Raphaello, who was guided by an exquisite and delicate taste, and aided by his able co-operators, who prided themselves in being his disciples, could not fail to obtain that reputation by which it was distinguished amongst the ancients as well as amongst the moderns.

Raphaello has had many copyists in this branch of the art, but not one successful imitator. The best modern examples of arabesques in Italy are his own productions, and those of his school. Such are those of the Doria palace, at Genoa; Cancelleria, Villa Lanti, and the Villa Olgiati, at Rome; together with several others.

The arabesque style ought to be governed in its caprices in such a manner that the union of the things possible and impossible form not too striking contrasts. Arabesques should be employed in the decoration of superficies, or apartments, which are but of medium dimensions. When applied to immense surfaces, this style loses all the merit of its details, and that species of verisimilitude which is not objected to when on a lesser scale, without however being able to attain the propriety, harmony, and just relation which the decoration of large apartments requires.

Arabesques should never be employed in the decoration of any situations that require solemnity, and ought to inspire respect; as this style presents a diversity of discordant subjects and objects

which are incompatible with such sentiments. It is in small apartments that the application of its resources are the best employed. In such situations will be found, by means of ingenious compositions, suitable occasions for the display of the most varied motives. Allegory furnishes it with inexhaustible means, by the metaphorical decoration of each apartment, and the dedication of it to the divinity that presides over the use to which it is applied. The different emblems of sleep, Apollo, Bacchus, the Muses, &c.; the plants which are consecrated to them, their attributes, which together with the animals, birds, and insects, that bear an affinity to each of these deities, ought to be distinctly and separately represented in each apartment, indicating the reigning subject and proper character of the local, the appropriate use of which is intended to be expressed.

This manner of decoration has the advantage of being adapted to the irregularity and disproportion of apartments. In the hands of an intelligent artist, it seldom fails in concealing the most striking and disagreeable forms, to whom it affords the means of decorating any surface. If the height of the part to which it is intended to be applied be not of a suitable proportion, it may be subdivided so as to reduce it to a more apparent relation with its length. If the length of the apartment be too great for its height, this inconvenience may be

remedied, by dividing its length according to the proportions prescribed by the least spaces, which will form those of pilasters, friezes, and panels.

The last permits of being filled either by figured drapery, or by round, oval, or square forms, that receive paintings attached from space to space by ribands, or by draperies forming folds at each part by which they are suspended. By these means a regularity of proportion, and also a symmetry of design, may be given to apartments. The vacant spaces will permit of the insertion of rising ornaments composed of leaves, flowers, branches, &c. executed either in painting or sculpture.

This style of ornaments requires the greatest care on the part of the artist, both as regards composition and execution. When scrolled foliage rises to the height of from ten to twelve feet, it is necessary to avoid gaining that elevation at one cast, or from one point at the lower extremity, and to distribute the height into three parts. The stem should be of such a sufficient consistence as reasonably to produce all that may be introduced along the surface until it reaches where it is divided by means of a cameo, or by a painting; the total should be terminated by objects bearing some analogy to the rest.

It should be observed, not to make the scrolled foliage too rich or too heavy, as flowing forms and simple contours constitute its greatest merit. The

different branchings or ramifications which may be introduced, to give variety to a composition, should be motived and authorized; the parts ought to follow each other, and be naturally introduced, making the reason of their situation evident. The choice of leaves may be ranked amongst the means which afford the greatest abundance and variety of contours, and of striking effects. Such are the wild acanthus, artemisia, matricaria, hemlock, large parsley, &c. all of which leaves produce sharp outlines and effective touches.

In the employment of these leaves, it is necessary to study the natural order and gradation of their masses. The first masses should be small, the others successively increasing as they approach the centre, afterwards diminishing as they reach their extremities, which should be weaker, it being requisite that the stronger bear the weaker parts. The imitation ought to be sufficiently perfect to make known the different plants which have served as models to this style. Although such licenses may be taken in their execution as characterizes this branch of decoration, yet from this defect of a scrupulous imitation of nature, one of the greatest pleasures which their employment is capable of producing is lost.

The details of the arabesque style are so numerous, the combinations by which they are modified so various, that the precepts of taste in their em-

ployment might almost be infinitely multiplied. The greater part of them being common to the other branches of decoration, they will be found treated upon in the different parts of this article. But it is harmony, that great principle of the arts, which ought to be the most observed in the composition, execution, and arrangement of arabesques. This harmony may be divided into three classes, namely, the harmony of ideas, of colours, and of masses.

The harmony of ideas, in the unity of motive or design, in the intelligence of the details, the intellectual relation of each of the parts, and the concert of all the attributes and accessories which, when guided by one spirit towards the same end, gives to this style a forcible symbolical expression.

The harmony of colours results from a skilful accord of all the parts which form the composition and grounds presenting a variety of colours, the agreeableness and mellowness of the tones, judicious introduction of stuccos, bassi-rilievi, scrolled foliage and figures, and from the manner of executing them according to the situation, effect of the light, and the distance of the objects.

The harmony of masses is that which presides the most predominantly in the arrangement of arabesques; it consists in the distribution and employment of the parts, so as not to let too

great a portion of the ground be perceived, or be unequally covered. It is from this judicious disposition of the lines that arises the agreeable impressions afforded to the sight, the execution presenting nothing either wanting or out of place. That part of arabesques of which the scrolled foliage of the ancients offers the most beautiful models, is the most difficult, and likewise but rarely introduced in modern arabesques.

Simple figures, which constitute the second kind of the second class of allegorical objects, are those that possess in nature an evident model. It is in this class, more than in any other, that allegory becomes unlimited. It furnishes decoration with matter which is as rich as it is inexhaustible.

To whatever use an edifice may be destined, or whatever be the style of its architecture, figures, if they be characteristic, will add greatly to its effect. A triumphal arch, entrance gates, theatre, hospital, market, fountain, palace, church, &c. are all susceptible of receiving allegorical motives or designs.

Simple figures, in decoration, comprehend bassi-rilievi, together with figures in rilievo, as statues. The latter are too generally considered as objects purely decorative. Niches, pedestals, and colonnades, in which statues are placed, are often

employed merely to give effect to a composition, without the least question as to the propriety of the subject of the design with the use and destination of the edifice. The application of statues, as being one of the greatest luxuries of decoration, should be principally confined to public monuments and public edifices.

The third class of allegorical subjects, or extensive compositions in painting or sculpture, has been the most employed by the moderns.

It is not probable that the ancients ever introduced, in the interior decoration of their edifices, allegorical compositions of such gigantic dimensions as the moderns. It is true that the ancients applied subjects in painting to the interior of their edifices; but it may be affirmed, that they consisted only of such compositions as could easily be embraced by the sight, and as easily understood by the mind. They were by no means so extensive as those executed by the moderns, particularly in the decoration of cupolas and ceilings. These immense compositions have no other value than the effect of the colours, and the deception of the perspective. In such applications it is indeed difficult to develope a correct taste, and the true principles of imitation.

The too great extent of a composition in painting presents the artist with the disadvantage of not

being able to address the comprehension of the spectator. For how is it possible that the mind should be able to comprehend the total of a composition at an elevation of three hundred feet, and comprising also a circumference of three hundred feet? When it is necessary to express objects at such a distance, it is better to employ simple allegorical characters, or the ornaments that architecture furnishes, as being more suitable for similar situations.

Sculptured figures, and subjects executed in basso-relievo, have sometimes been practised in the decoration of cupolas and cylindrical ceilings. Nothing can be more improper than this employment of sculpture, the heavy appearance of which seems to menace the safety of the spectator.

Sculpture, when injudiciously employed in decoration, is fatiguing both to the sight and the understanding. Equally offensive are misplaced allegorical characters and subjects of composition, which, when applied with discretion, are invaluable to architecture, as being one of the most natural and appropriate means of decoration. The greater part of the antique edifices, and some modern ones, prove what a degree of expression may be attained in their decoration by means of sculpture in basso-rilievo.

The Greeks and Romans applied a considerable

portion of the riches of sculpture to the pediments of their edifices. The Parthenon, at Athens, has preserved some fragments of the decoration of its pediment, which exhibits to us an example of perfection in execution, united to greatness in composition. The metal cramps in the tympanum of the portico of the pantheon, at Rome, indicates that its pediment was decorated with a basso-rilievo. The columns of Trajan and Antoninus, and the triumphal arches, may be further cited as varied examples of the inexhaustible resources of sculpture. These last-mentioned productions exhibit to advantage the resources of the art as a medium of historical communication, its monumental inscriptions serving as records of past events.

There are three kinds of relief by which figures are more less detached from the ground upon which they are sculptured, namely, the alto-rilievo, or bold relief; mezzo-rilievo, the medium or half relief; and the basso-rilievo, or low relief: but each of these is at the present day indiscriminately termed a basso-rilievo.

Although the execution of this style particularly relates to sculpture, nevertheless, from the frequent, necessary, and varied employment of it in architectural decoration, both internally and externally, it would have been a blameable omission not to have mentioned it in this article in its pro-

per place. An architect, doubtless, stands in less need of being familiarly acquainted with all the details and precepts of execution in this branch of art than a sculptor; notwithstanding, he ought not to be ignorant of the origin, nature, and the correct rules of taste, which constitutes the perfection of this part of decoration. By this knowledge he will be enabled to direct the sculptor in the form, disposition, and style, suitable to bassi-rilievi, according to the manner in which he may judge requisite to employ them, and the accord which ought to exist between them and the ordonnance, conformably with the character of each edifice.

Amongst the ancients, bassi-rilievi were never employed independently of architecture. Whether this branch of art displayed its riches in the pediments of temples, or on the triumphal arches,—whether it decorated the face of a frieze, or the more confined space of a metope, in its application to pedestals and stylobates, vases, altars, and tombs, ornamenting their contours, designating their employment, or giving movement to their aspect—yet it will be found invariably to be subordinate to the architecture, or forms of the objects to which it is applied.

The principle followed in the application of bassi-rilievi to the triumphal arches is the same as that which is manifested in the construction of the Trajan column, and all other monuments presenting

the same spirit of design. The bassi-rilievi employed in these examples constitute a long and visible narration of the actions of this emperor; they form an ocular recitative, a material and striking history of his actions and victories. The divisiou which the historical sculptor should make of the portion of this style belonging to art, and that part of it which properly belongs to history, ought to be such as to induce him to regard his figures under a double relation, endeavouring to make them express the reason of their employment, rather than draw admiration; they ought to instruct rather than please. He should make them speak to the understanding, in the clearest manner, all the language which they adopt, rather than employ his skill to render their contours more agreeable.

It should be observed, not to employ a multitude of ornaments around bassi-rilievi, as these attract the sight and attention from the principal subjects which they offer. If they are not insulated by means of a moulding, there should be an even surface left around them to give repose to the sight, and effect to their relief; likewise similar arrangements ought to be made between them and the different members of architecture. The proximity of the principal parts, the profiles and details, injures the effect of bassi-rilievi, and introduces discord in the total.

The relation of the proportions of bassi-rilievi,

and the figures of which they are composed, with an ordonnance, is another point which ought not to be neglected by an architect. There might result, from this want of an exact and judicious relation, a striking disproportion in the whole of the composition. The figures in bassi-rilievi are employed by the eye, from being an easy measure, to serve as a species of scale, whereby to appreciate the different dimensions. The little or exaggerated size of the figures would render the appearance of the ordonnance either trivial or colossal, and by this means injure the proportions of an edifice, which in themselves might be beautiful.

The same may be said as regards the greater or less projection that bassi-rilievi ought to have. An architect ought to regulate it according to the degree of strength or delicacy of his ordonnance, greater or less expression of force and energy of the profiles, the general character of the style adopted, the point of view of the edifice, and also the situation of the bassi-rilievi, the light they may receive, the effect it is necessary to produce, and its accordance with the reigning style of the ornaments, and the quality or value of the surrounding parts or details.

The rules of taste, relative to a good and judicious employment of sculpture, whether allegorical or historical, in edifices, equally appertain to all the preceding precepts and observations.

The importance of this article, the subject of which constitutes a great portion of the art of architecture, will form a sufficient apology for its being so considerably extended. It shall, however, be terminated by offering a few remarks on decorative painting, and the imitation of all that is employed in the embellishment of edifices by that means.

This part of decoration consists in the imitation of another imitation. Indeed, if we except figures, landscapes, flowers, and some other objects which sometimes form a portion of the combinations of the decorator, the principal parts of this branch of the art consist in perspective or geometrical views of architectural ornaments in relief; of statues, niches, vases, altars, monuments, &c. produced by painting, under different forms. This imitative decoration has the same principles, and is governed by the greater part of the rules which are applicable to the original decoration, which serves as its model.

The different modern examples of the compositions employed in this style are for the most part capricious; and strange to say, there may be found architects of so perverted a taste, as to rival the decorative painter in the unwarrantable licenses which they have taken with the construction of their edifices.

Those who desire to procure a lasting fame by their architectural productions, will, on the con-

trary, endeavour to gain it by the exhibition of a correctness and purity of ordonnance, and a total characteristic of their destination. An architect, who ought always to guide the decorator, should only permit the employment of feint decorative architecture on walls and superficies, of which the point of view is common to a great number of spectators, admitting nothing in his compositions but what is consistent with correct taste, and with the accord which ought to exist between all the parts of an edifice.

The decorator may be less restricted in the embellishment of the interior apartments and galgeries, where his art is not subjected to any pre-existing ordonnance. Under these circumstances, decorative painting has two different manners of employing its resources. It may either be considered as presenting architectural paintings, or as replacing the different parts of an ordonnance by an exact and deceptive imitation of them.

In the first manner, the decorator paints on the walls ideal views of edifices, representations of well-known monuments, or ruins. This part is dependant on painting, and enters into the ordinary rules of imitation. This species of illusion, which tends to conceal, by the effect of aerial and lineal perspective, the apparent consistence of the surface to which it is applied, is not suitable to all kinds

of interiors, and would often be misplaced in the decoration of certain apartments, which, by being destined for important uses, therefore require an expression of gravity. It is adapted for the decoration of dining-rooms, and others of a similar destination.

In the second manner, the decorative painter replaces, by the effect of imitation, the resources of real architecture. In place of columns in relief, entablatures, pilasters, niches, and real statues, all these objects may be executed in painting. This style of decoration is then subjected to the same rules of proportion and propriety as real architecture: none but an architect should conduct its execution. Its great merit consists in the purity of its forms, and the truth of its tones. This species of illusion, when well executed, will sometimes at the first glance deceive the most experienced eye. There are examples of this kind of deception, which are so ably combined with real architecture, that it is difficult to avoid being deceived thereby.

All the other objects of which decoration is composed, forming an assemblage of ornaments which, by means of painting, are employed to embellish edifices, too nearly appertain to the art of painting itself, to claim a more extended notice in this work. An architect should conduct the total of

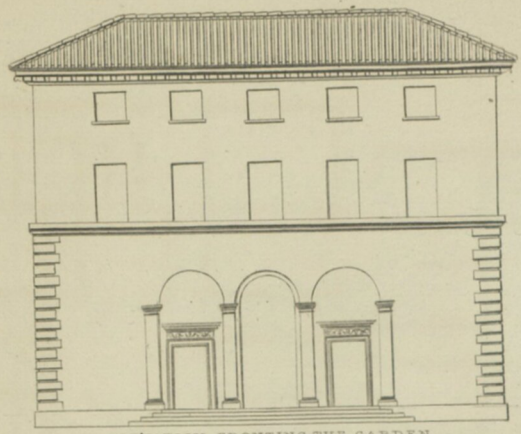
each branch of decoration applied to his designs, directing and making choice of such subjects as are conformable to the locality they are intended to decorate, and to the character of his edifice, so that the entire decoration of an edifice may present an harmonious conformity to the general design and taste of its architecture.

FINIS.

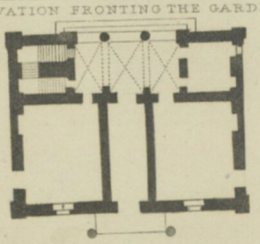
R. AND J. GLEAVES, PRINTERS.

PLAN AND ELEVATIONS OF A HOUSE.

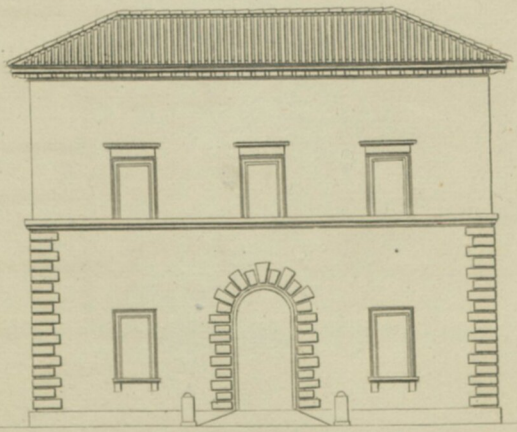
Pl. 56.



ELEVATION FRONTING THE GARDEN.



PLAN OF A SMALL HOUSE IN THE BORGO DEL POPOLO, AT ROME.

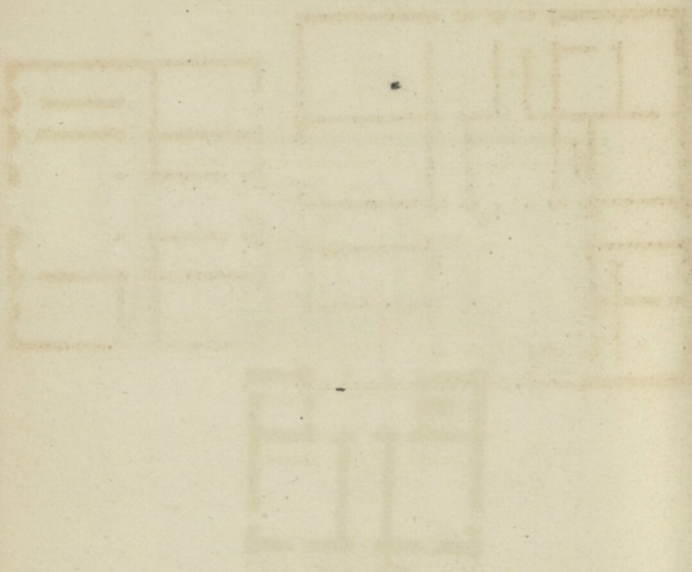


ELEVATION FRONTING THE STREET.

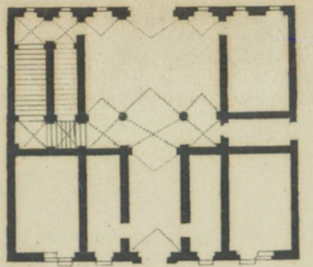
Scale of the Plan.

Scale of the Elevations.

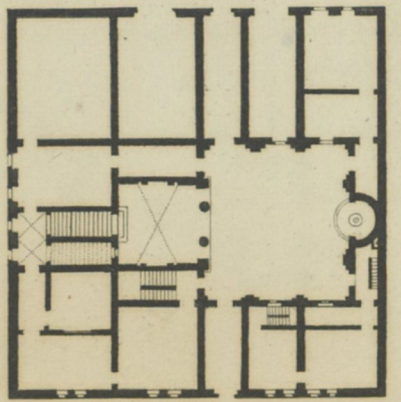
Edinburgh Sc.



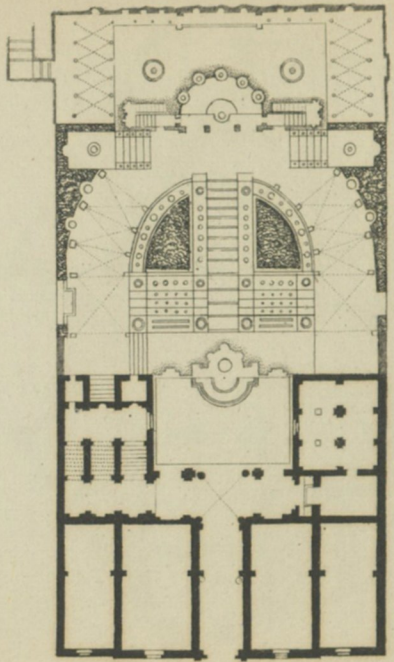
Pl. 57.



IN THE BORGO DI SAN PIETRO AT ROME.

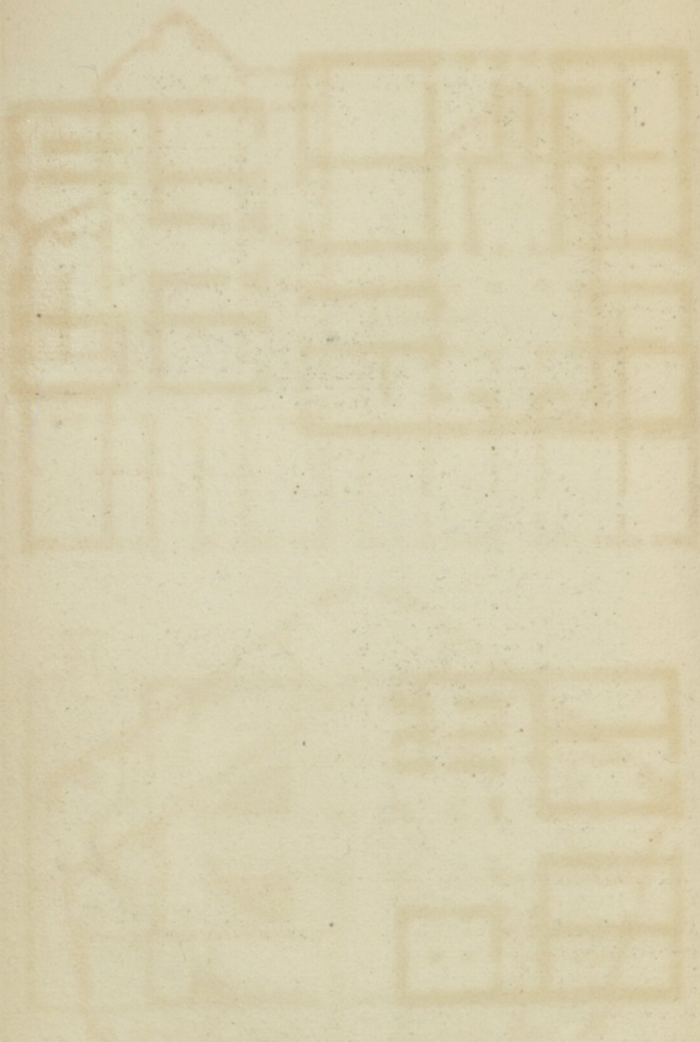


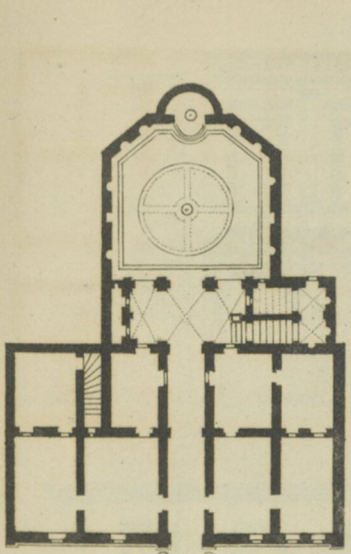
NEAR THE CHURCH S. SALVATORE DELLE COPELLE AT ROME.



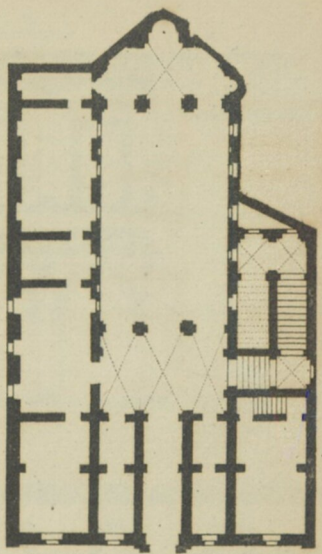
IN VICOLO DELLA PEDACCHIA AT ROME.

Pickering Sc

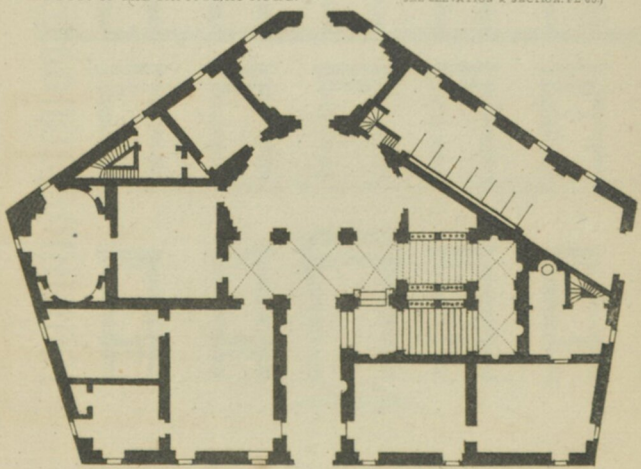




AT THE FOOT OF THE CAPITOL AT ROME.

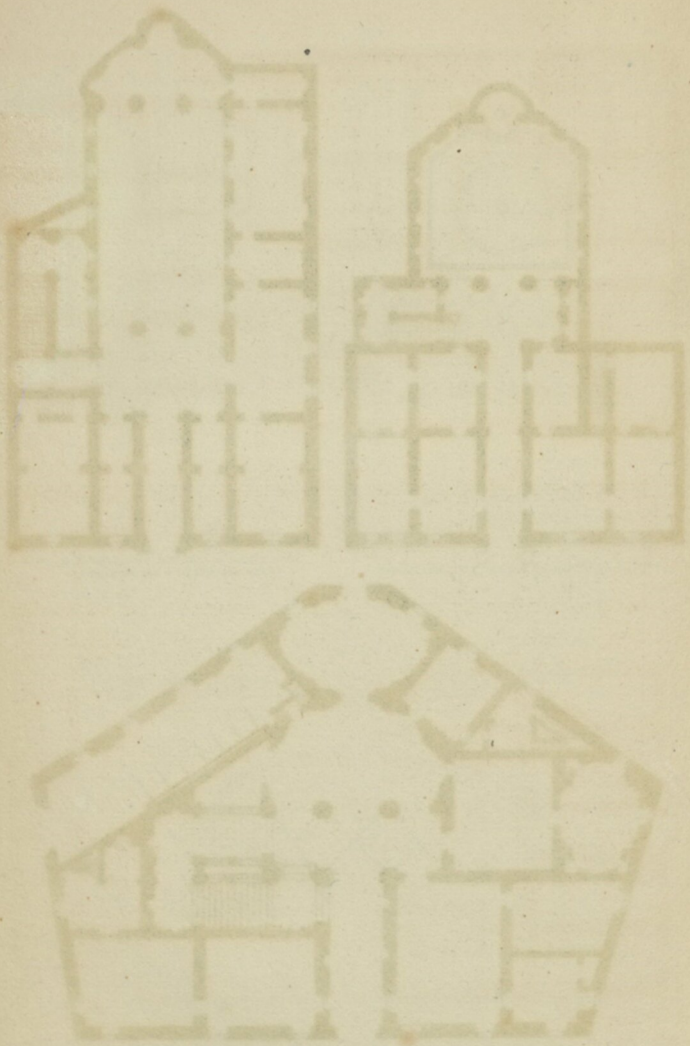


AT STRADA DELLA VALLE AT ROME.
(SEE ELEVATION & SECTION. PL. 60.)

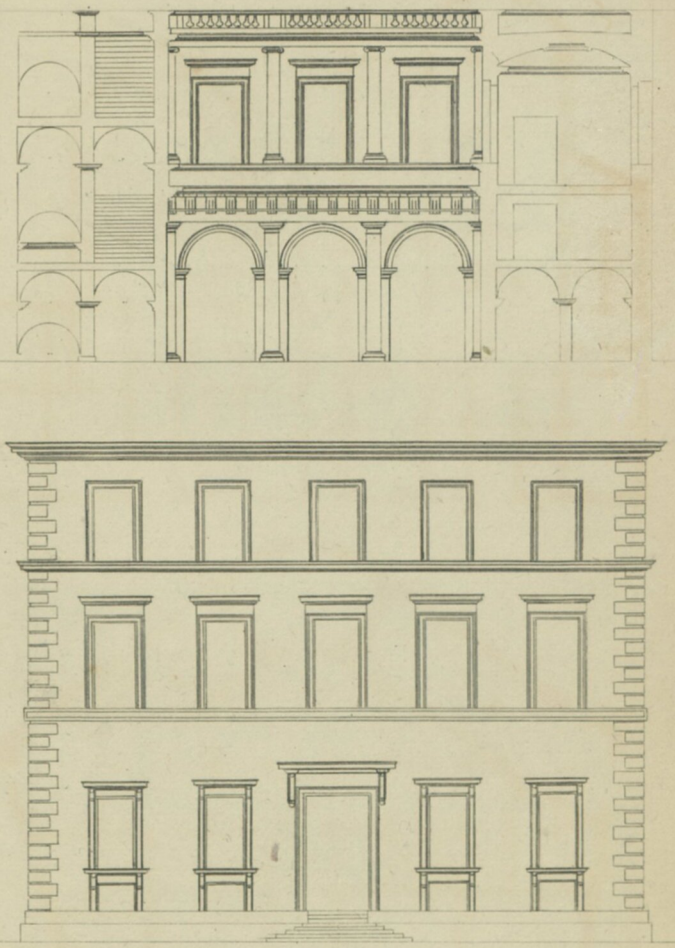


IN THE VICINITY OF THE CAPITOL AT ROME.

Scale of the Plans 1 2 3 4 5 feet

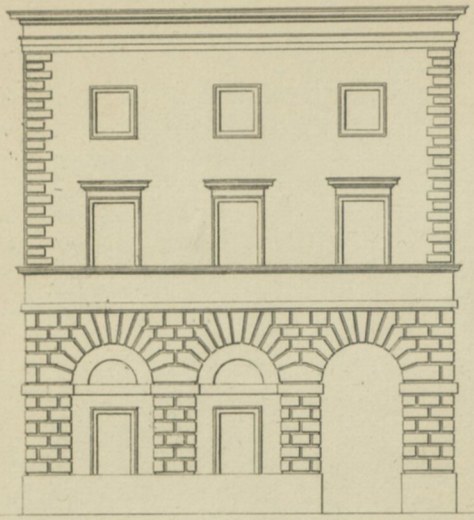


ELEVATION & SECTION OF A HOUSE.

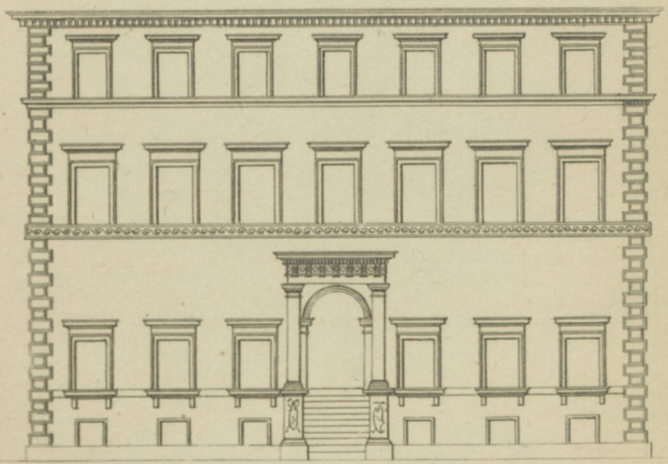


IN THE STRADA DELLA VALLE, AT ROME. (FRANZZI.)

Scale of the Section & Elevation.

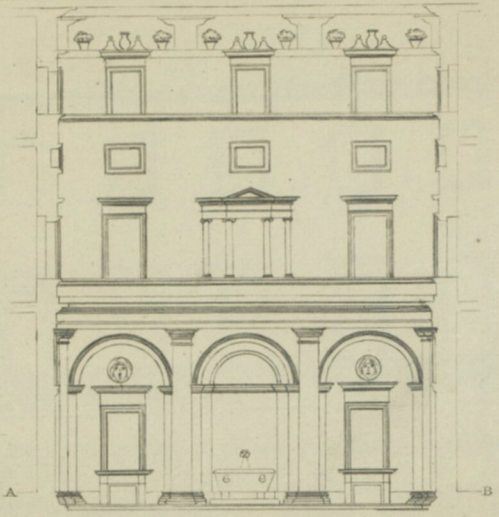


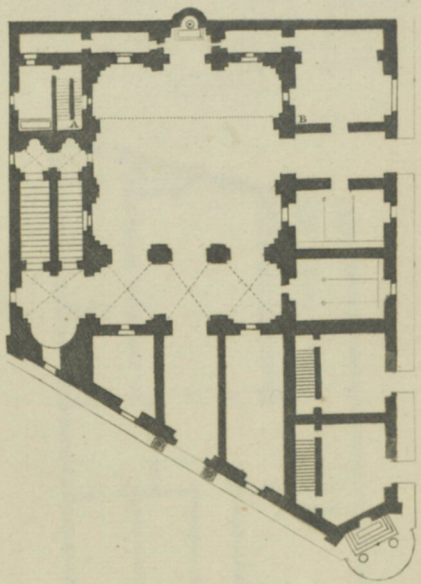
AT PIAZZA FIAMMETTA. AT ROME.



IN VICOLO DE' PASTINI, AT ROME (ANTONIO DA SANGALLO.)

PLAN & SECTION OF A HOUSE



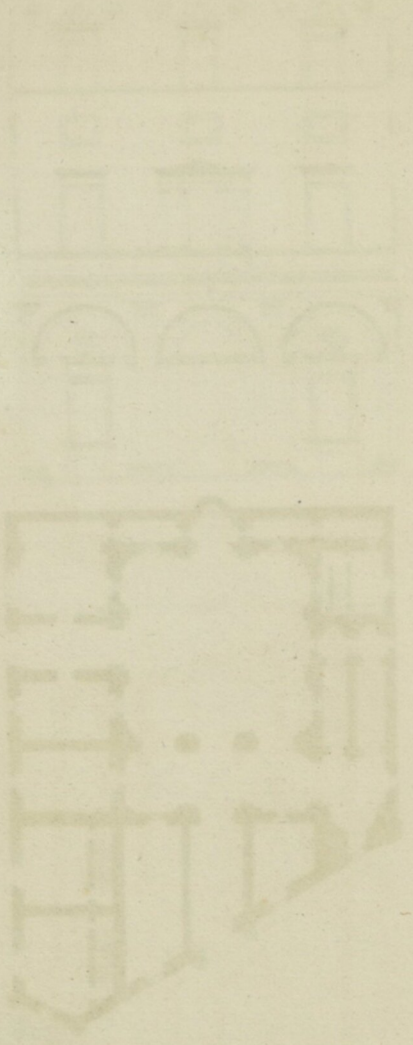


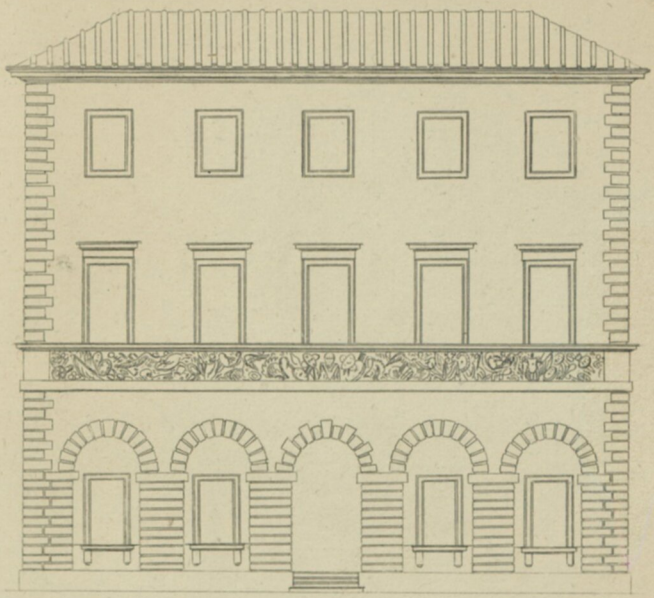
IN THE STRADA DI RIPETTA, AT ROME.

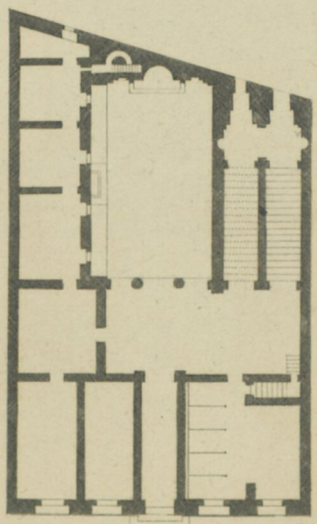
Pubd by Rees

Scale of the Plan. Feet

Scale of the Section. Feet

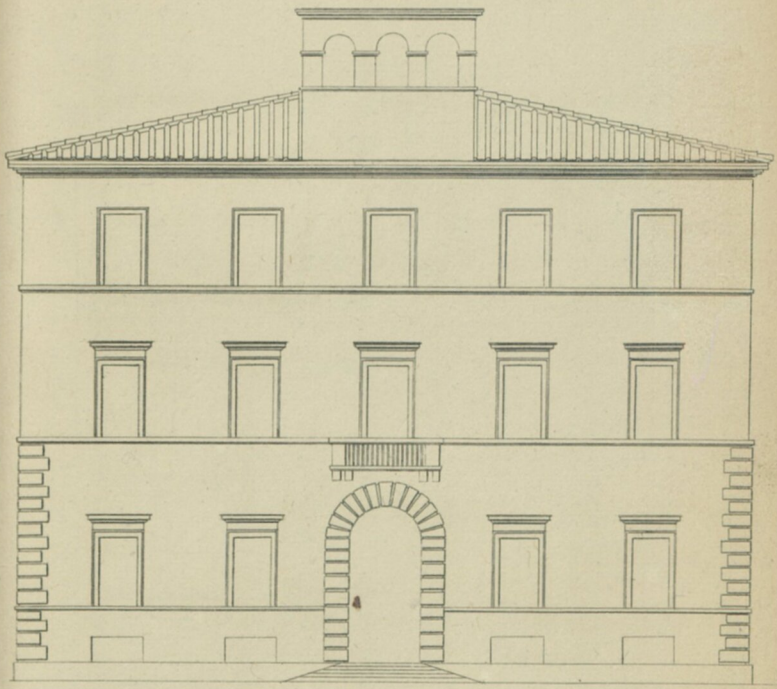






IN THE STRADA GIULIA AT ROME. (PERUZZI)

ELEVATION OF A HOUSE.

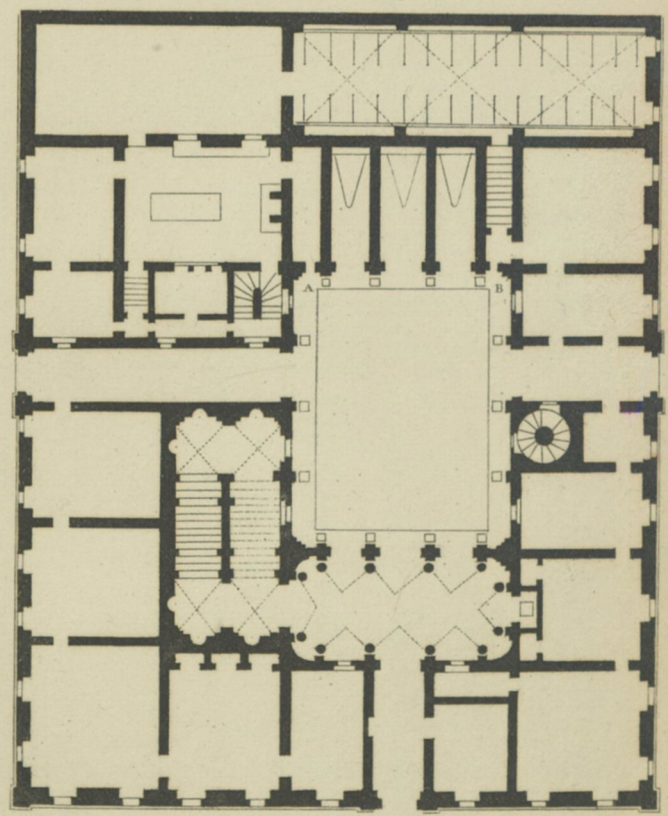


NEAR BORGHESE PALACE AT ROME.

Scale of the Elevation.

Fothergill Sc.

PLAN OF GUISTINIANI PALACE

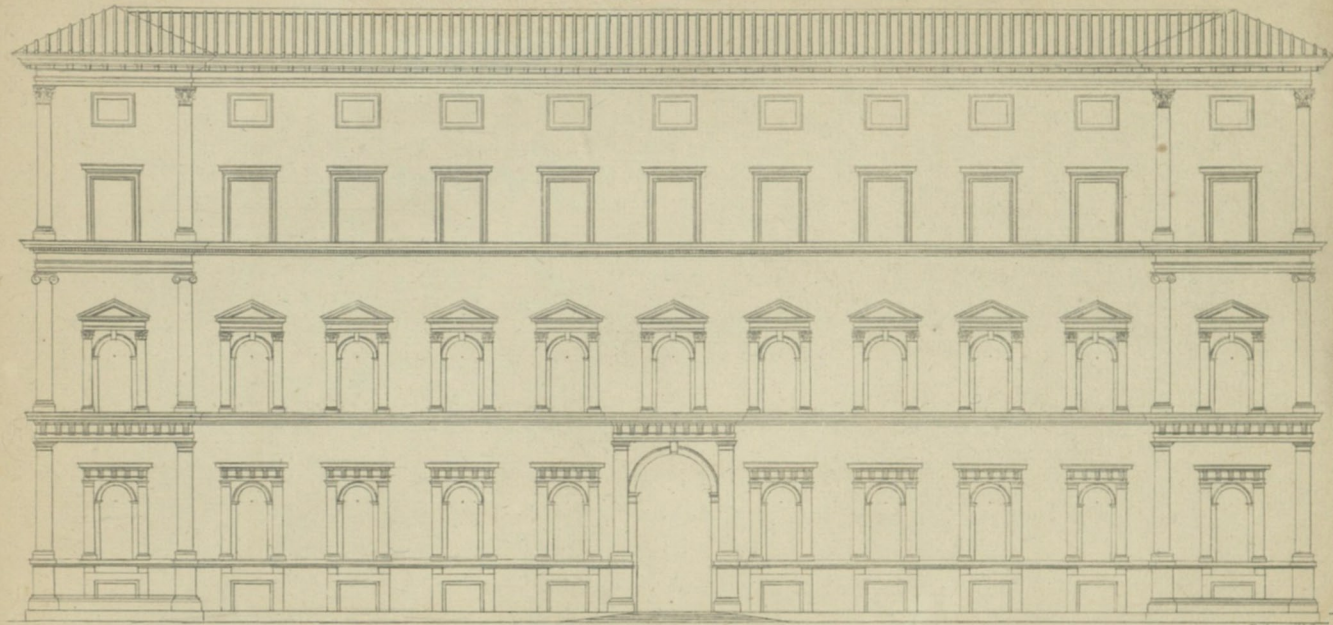


NEAR THE PANTHEON AT ROME. (GIO. FONTANA.)

(SEE SECTION PL.76.)

Scale of the Plan.

ELEVATION OF A PALACE.

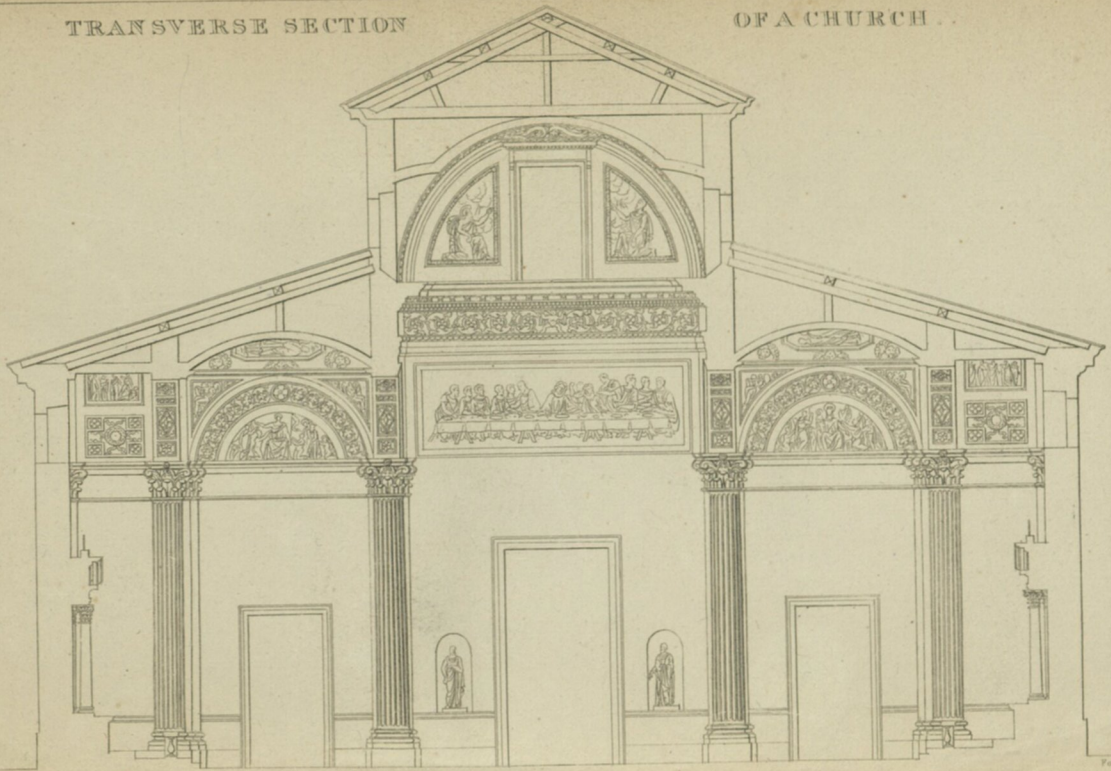


Fothergill 35

BUONCOMPAGNI PALACE SORA PLACE AT ROME (BRAMANTE)

0 10 20 30 40 Feet
Scale of the Elevation

TRANSVERSE SECTION OF A CHURCH.



Fothergill Sc.